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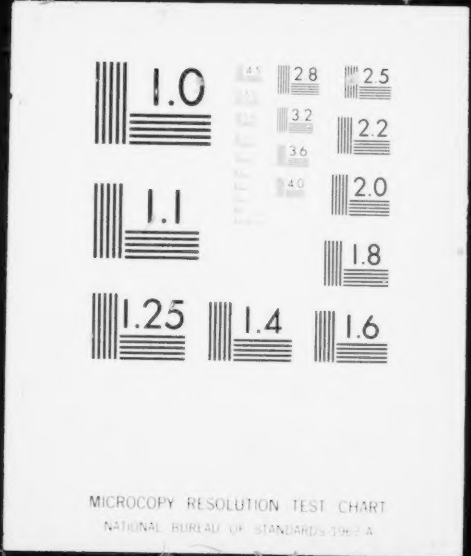
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ABSTRACT

The primary purpose of this volume is to serve as a "how to" manual for individuals interested in replicating or expanding the data collected by the Studies. Two introductory sections discuss the development of the methodology and the organization of the methodology description. The three subsequent chapters, which constitute the body of the document, are devoted to a presentation of the methodogy. The first of these chapters describes the procedures involved in generating data from the sites selected for study. The second chapter describes data reduction activities, while the third chapter describes the procedures involved in the preparation of a profile description of the site visited. An epilogue following the three methodology chapters discusses briefly the nature of the methodology as a technological contribution. Related documents are EA 004 582-588. (Author)

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THE OREGON STUDIES

RESEARCH
DEVELOPMENT
DIFFUSION
EVALUATION

METHODOLOGY

VOL V

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TEACHING RESEARCH

a division of the Oregon State System of Higher Education

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AN OVERVIEW OF THE OREGON STUDIES IN EDUCATIONAL RDD&E

In the spring of 1970 the Training Branch of the U.S. Office of Education, National Center for Educational Research and Development, announced a plan to effect change in the preparation of educational RDD&E personnel. Two factors led to the announcement. The underlying factor was the rather dramatic emergence in the past decade of development, diffusion, and evaluation activities as vehicles for educational improvement, and the attending need for qualified personnel to carry them out. The precipitating factor, however, was evidence that in spite of an investment of approximately 30 million dollars by the Federal Government to help training programs become more responsive to the personnel needs created by these new activities, essentially the same number and kind of personnel were being prepared in 1970 as in 1965.

The plan for change reflected a strategy that can best be described as "beginning at the beginning." It incorporated three interrelated lines of activity: the creation of a conceptual and empirical base on which to build functional training programs; the design of more effective and efficient approaches to training; and the development of instructional materials that reflect desired changes in both content and procedure. The propositions on which the plan rested were straightforward: (a) little was known about educational development, diffusion and evaluation activities, or how they related to educational research; (b) even less was known about the training of personnel to carry out such activities; and (c) until both of these conditions were remedied the likelihood of designing effective and efficient programs to prepare personnel to carry them out was slight. The plan as a whole was coordinated so that the various activities within it would be developed with sensitivity to each other, and so that they would come together in completed fashion at approximately the same point in time. (For additional details on the plan for change see Chapter I in Volume I of the series reporting the Oregon Studies.)

The Oregon Studies, carried out by the Teaching Research Division of the Oregon State System of Higher Education, were to contribute in a beginning way to the conceptual and empirical base called for in the plan. As such they were to produce five products: a collection of detailed "case study" descriptions of projects that illustrated exemplary RDD&E activities within various educational contexts; a reliable, economically feasible methodology by which to collect the data needed to prepare the case studies; a conceptual system or framework for viewing the domain of educational RDD&E that could be used as a guide to the classes of data to be attended to in the case studies; cross-project analyses that highlighted the similarities and differences observed in the projects described, and that tested in rudimentary fashion the adequacy of the conceptual framework underlying those observations; and a compendium of the existing literature that pertained to either the nature of or the interactions between activities labeled educational research, development, diffusion and evaluation. These products are reported in five volumes:

Volume I.	Summary Report (with Technical Appendices)
Volume II.	The Literature of Educational RDD&E Part One (Research, Evaluation, and Development) Part Two (Diffusion & Combinations of RDD&E)
Volume III.	Conceptual Frameworks for Viewing Educational RDD&E
Volume IV.	Profiles of Exemplary Projects in Educational RDD&E Part One (Research and Evaluation) Part Two (Development) Part Three (Diffusion)
Volume V.	A Methodology for the Study of Educational RDD&E

Each volume in the series reporting the Studies has been designed to stand alone, but because each volume reports a different product, and each product can be understood fully only in relation to the other products, two "reader's guides" to the series have been prepared. The first involves brief summaries or abstracts of the contents of each of the five volumes in the series. These appear on the inside of the back cover of the volume, and are intended to serve as a guide or overview to the series as a whole. A more detailed guide is provided by Volume I. In addition to serving as a general summary of the Studies, it contains descriptions of the developmental histories of the products reported in the various volumes, the relationships that exist between them, and the manner in which they have interacted over time. Accordingly, for the reader who wishes to determine quickly what each of the five volumes in the series contains, turn to the inside of the back cover of the volume; for the reader who wishes to understand how the volumes relate to one another, follow that by reading Volume I.

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Final Report

Project No. 0-0701
Grant No. OEG-0-70-4977

A project entitled, "The Generation of Information to Support Long-Term Manpower Studies of and Planning for Training Programs in Education R, D, D, & E"

(Volume V of five volumes)

THE OREGON STUDIES IN EDUCATIONAL RESEARCH, DEVELOPMENT, DIFFUSION, AND EVALUATION

VOLUME V

A METHODOLOGY FOR THE STUDY OF EDUCATIONAL RDD&E

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ABSTRACT

This is the fifth in the series of volumes reporting the results of the Oregon Studies in educational research, development, diffusion and evaluation. The Volume's primary purpose is to serve as a "how to" manual for individuals interested in replicating or expanding upon the data collected by the Studies. The two introductory sections of the volume, "Notes on..." and "Guide to...", discuss the development of the methodology and the organization of the methodology description in this volume. The remaining three chapters are devoted to a presentation of the methodology. The first of the three chapters describes the procedures involved in generating data from the sites selected for study. The second chapter describes data reduction activities, while the third chapter describes the procedures involved in the preparation of a profile description of the site visited. The epilogue following the three methodology chapters discusses briefly the nature of the methodology as a technological contribution.

PREFACE

The present volume contains a description of the case study methodology developed within the Oregon Studies. It describes the elements within the methodology, the decision rules to be followed in applying the methodology, and the steps to be taken in translating the data generated by the methodology into its various reporting forms. As such the volume is intended to serve as a training manual for persons wishing to apply the methodology in subsequent research efforts.

The volume has been organized into chapters that portray sequentially the steps taken in applying the methodology. The three chapters that comprise the volume, and the topic or "activity" headings within the first three chapters, reflect this sequencing principle. Thus, as the volume is read, the reader will progress from the steps to be taken in contacting a potential project for study through the various steps in data collection, analysis and reduction, to the preparation of the case profiles and data displays that function as the repository for the data collected through the methodology. Category sets, decision rules, computer programs for analysis, and detailed descriptions for use of the data files created in the Oregon Studies appear as appendices to the volume. So organized, the volume has utility as a general description of the methodology as well as a manual to be used in preparing persons to use the methodology.

By design, the volume has been prepared after the methodology had been developed, and after all data had been collected and processed in the form of case profiles. This was deemed essential, as early in the Oregon Studies the decision was made to let the methodology remain open to change throughout the life of the Studies. This was in keeping with the perception of the Oregon Studies as only the first of a series of empirical studies to be undertaken on the nature of educational RDD&E, a primary objective of the Studies being the development of a strong conceptual - methodological base for the subsequent studies. Obviously, data were also to be collected during the course of the Oregon Studies (see Volumes I and IV in the series of volumes reporting the Studies for a summary of the data collected), but they were to be collected as much for the purpose of methodological development as the increased understanding of educational RDD&E that they would provide. The methodology has undergone six major revisions (see NOTES ON THE DEVELOPMENT OF THE METHODOLOGY) and has been tested for its applicability by being applied to the description of 20 ongoing educational RDD&E projects that varied significantly one from another in size, setting, focus and content.

Given the centrality of the methodological effort to the Oregon Studies, the requirement that it be fashioned against and consistent with the conceptual framework guiding the empirical thrust of the project, and that it be demonstrably effective (exhaustive, reliable and manageable) in the description of a broad range of ongoing RDD&E activities, its development and testing became the most critical and the most demanding task within the Studies. It literally pervaded every aspect of the Studies, and it extended throughout the life of the Studies. As a consequence, the development and testing of the methodology involved a large number of people. The authors of the conceptual papers, for example, (see Volume III of the series of volumes reporting the Studies) reviewed the methodology each time that their papers were reviewed; all of the directors of the projects responsible for the design of new training programs reviewed it once, and two of the three directors of the newly funded experimental training programs reviwed it three times; representatives from the fields of social anthropology, social psychology and industrial psychology were advisors to its development; and it was discussed repeatedly with the directors of the related AERA studies. Much of that which is good in the methodology, therefore, must be attributed to the efforts and wisdom of others.[1]

Once again, it is necessary to note the special contributions of Ms. Cora Beebe, Drs. John Egermeier and Paul Messier of the OE staff and Dr. John Hopkins of Indiana University. They, individually and collectively, placed shape on this effort, insisting that development of methodology was the true project focus.

While the contributions of those mentioned to the methodology have been great, the major burden of its development has been carried by the staff of the Oregon Studies. And, as indicated, that burden was considerable. A relatively unknown "case study" methodology had to be fashioned from what was planned as a standard task or job analysis methodology; a unit of analysis other than tasks or jobs had to be found; a format for the presentation of "case profiles" had to be established that could serve both as a repository for data and a readable description or "map" of a particular RDD&E activity; a conceptual framework which "...differentiates and relates..." educational RDD&E had to be developed and then translated into a methodology that provided trustworthy data on all of the parameters identified within it; and both the conceptual framework guiding the methodology, and the methodology itself, had to be tested empirically for their effectiveness as descriptors of a wide range of RDD&E activities. All staff on the project were involved in one way or another with these various tasks, and in the Preface to Volume I in the series reporting the Studies are so recognized. The contributions of a number of staff to the methodology have been so great, however, that they must also be recognized here: Dr. Dale Hamreus as coordinator of methodological development in Phase I of the project, and with Dr. Harry Ammerman primary developers of the questionnaires; Dr. John Williamson for suggesting output as a unit of analysis; Mr. Gregory Thomas, Mr. Clark Smith and Mr. Loring Carl as major contributors to the adoption and development of outputs as the central unit of analysis in the methodology, as opposed to jobs or tasks; Mr. Clark Smith and Mr. Loring Carl as the primary developers of the on-site interview methodology, the on-site data reduction methodology, and category sets used for coding purposes; Mr. Gregory Thomas and Mr. Bill Hickok as the primary developers of the computer based data management system and cross-project analyses; Mr. Darrell Clukey as primary developer of the data tracking system; and Dr. Ammerman, Ms. Lee Green, Mr. Darrell Clukey, and Mr. Norman Crowhurst as primary developers of the case profile format. Without the special abilities of these people, without their willingness to assist in the continuous interchange between conceptual and methodological development, and without their willingness to work far beyond that which could be asked of them legitimately, the methodology would never have reached completion.

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[1] The names of persons contributing to the development of the methodology, as well as other aspects of the Studies, will be found in the Preface to Volume I of the series of volumes reporting the Studies.

My thanks, my sincerest expression of appreciation, and my congratulations to all for a job well done.

H. Del Schalock
Director of the Oregon Studies

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Editor's Preface

The preparation and printing of this volume marks the completion of the fifth and final volume of the series reporting the Oregon Studies. From the outset it was intended that the volume be prepared last and that it reflect any last minute revisions of the Oregon Studies methodology which might emerge from preparation of other volumes. Thus the task was one of documenting, throughout the life of the Oregon Studies, the processes being employed, documenting the changes, and finally assuring the edited accuracy of the final version.

Beyond the matter of the content to be presented in the volume was the matter of the presentation itself. The question arose as to how one can present a description of a relatively complex set of behaviors in such a way as to maintain some sense of the perspective required to understand the interrelationships of the processes. Advisors and consultants to the Oregon Studies had, at one time or another, observed that the staff might consider "turning the methodology on itself." With that thought in mind, the editors decided to adopt the strategy employed by the methodology, i.e., to make explicit the various significant and essential elements of the methodology through the means of stating them in output form. It is hoped that with the assistance of the section on Guide to Manual Organization and Use, the reader will find his way through the methodology with understanding and meaning.

The editors of this volume would be remiss in not extending a separate set of acknowledgements to those related to its preparation. First, all past and present staff members of the Oregon Studies, in effect, "authored" the methodology as such. Various of them participated in maintaining its documentation through periods of time within the effort. These persons have been acknowledged in the director's prefaces contained in this and other volumes reporting the Studies. Next, in an acknowledgement of, and appreciation for the expression of faith demonstrated by H. Del Schalock, Oregon Studies Director, in permitting the editors free license in the design and preparation of the volume. To those advisors and consultants who prompted us to turn the methodology on ourselves, our thanks. The exercise contributed immeasurably to our own better understanding of what needed to be presented. And finally, to the remaining secretarial staff, both birth and death having taken its toll, our deepest appreciation for attention to levels of detail beyond the call of duty: Jan Mishler, Bea Lindahl, Penny Lane, Mary Hamann, Mary Abusharr, Anita Jones and Delphine Freshour.

The Editors

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NOTES ON THE DEVELOPMENT OF METHODOLOGY

Ten specifications guided the development of the methodology employed in the Oregon Studies. Four of the 10 came from the proposal; four from the external reviews to which the methodology was submitted; and two were added by project staff as the methodology evolved. The specifications stated in the proposal included:

1. The methodology would produce, in case study format, trustworthy descriptions of the "competencies" needed by staff to carry out the operations involved in RDD&E activities. Descriptions were to include (a) the indicators acceptable as evidence of such competencies; (b) the knowledges, skills, and sensitivities prerequisite to the demonstration of competencies; and (c) the staffing patterns employed in the contexts in which the competencies were studied;
2. The methodology would be consistent with a "preferred" conceptual framework;
3. The methodology would be usable by people with widely varying backgrounds; and
4. The methodology would be published in a form that would make it transportable.

The specifications that emerged from the external reviews of the methodology included:

5. The methodology would be open to modification throughout the project and be demonstrably applicable across a broad range of projects;
6. The methodology would be open to the influence of what people in the field say about the nature of the domain and the significant variables within it;
7. The methodology would be capable of collecting data on the "dynamics" of project operation; and
8. Data collected by the methodology would be stored in retrievable form so that the data could be interrogated by others and could be added to by subsequent efforts.

The specifications that were added by the Oregon Studies staff as the methodology evolved included:

9. All labels used for purposes of classifying data would have intrinsic meaning; and
10. The procedures used in onsite data collection would be minimally demanding of the time of the data collection team.

To enhance the possibility of achieving these specifications, certain quality assurance procedures were employed throughout the project. These included external reviews and internal cycling and recycling as the collected data themselves reshaped the methodology. To the greatest extent possible, the statements of interviewees were used without significant change, reflecting the actual language of the domain. Data classifications/categorizations were subjected to repeated reliability tests to insure comparability of treatment.

Specifications and quality assurance procedures were not a mere set of rules "by which to play the game." They were mutually agreed upon guidelines which, it was hoped, would lead to a methodology which could be an outstanding tool for further exploration of this complex domain. Not only did the specifications establish basic parameters for the methodology, they made possible the confidence on the part of the staff that the final form of the methodology would: (1) be a tool of continuing value in many contexts, (2) gather and display a picture of what actually goes on in the field, and (3) be usable by the staff or others in going far beyond the door that was opened with this initial project.

Initially, the methodology was intended to evolve from a conceptual framework that was to be a synthesis arrived at by the combination of four "conceptual papers" (see Vol. III of this series). That "preferred" conceptual framework was to serve as the conceptual base to the empirical as well as the methodological efforts within the Oregon Studies. The assumption underlying the plan was not only that a synthesis could be achieved, but that it should be--both for the benefit of the Oregon Studies and for the field as a whole. When the first drafts of the papers were reviewed, however, it was apparent that the notion of a synthesis would have to be abandoned. The views presented in the papers were so diverse, and were held with such conviction, that the probability of reaching consensus on a single framework--especially in time for it to be of value to other aspects of the Studies--was near zero. As a consequence, it was decided in one of the review conferences (July 26-27, 1970) that only the paper to be prepared by the Oregon Studies staff (Schalock-Sell paper - see Vol. 3) was to guide and be reflected in the Oregon Studies methodology.

The actual methodology development sought to operationalize the notions set forth by Schalock and Sell, and the final configuration of the methodology does follow this conceptual framework to a considerable degree. Specialized interpretations were necessary, on occasion, to provide operational definitions of concepts. In some instances these interpretations either dropped out or added to portions of the conceptual framework. In the main part, however, the final framework concepts for studying the domain of educational RDD&E activity correlate quite closely with the final data gathering and reporting procedures.

The Oregon Studies were responsible for the development of a "case study" methodology by which relatively unspecialized personnel could generate and report data suitable for describing or mapping the people, operations and outputs of educational research, development, diffusion, and evaluation (RDD&E) activities. To enhance the power and meaning of the data supporting such mapping, the data were to be initially ordered and displayed in relation to the contexts from which they were collected, i.e., the projects they described. To accomplish this, a "Case Profile" format was designed for describing diverse projects. This format facilitated the ordering of project data to assure comprehensiveness as well as comparability of data across projects. The "Case Profile" became one of the two parallel development efforts which evolved into the total Oregon Studies methodology.

While the proposal and the conceptual framework established the basic project parameters and the nature of the data to be sought, and the Case Profile format established the manner in which those data were to be reported, the second of the two-pronged development efforts dealt with data collection procedures. Procedurally, six phases in the development of the methodology can be identified. First, prior to initiating data collection activities, outline designs of both profile format and data collection strategies were presented for conference review (July 1970). Modifications of the designs were made in Phase Two and data collection was initiated. The resulting data were prepared in three different profile styles for a single project. These were submitted for conference review, in conjunction with discussion of the data gathering procedures used, in October 1970. Following the October conference, the data gathering procedures were refined, a basic profile format was decided upon, and further data collection was initiated. This third phase ended with the presentation of the first four "full" profiles, and the data collection procedures used, to the third review conference (March 1971). In each of these three conferences, participants included the consultants to the Oregon Studies, training program designers, USOE personnel, and the conceptual paper writers.

Following the three conference phases, three operational phases continued to shape the manner in which data were collected, classified, coded, ordered and presented. The fourth phase involved refinement of the methodology and preparation of six more profiles to reflect the essential content and structure of the more advanced profile design.

The fifth phase involved an additional modification of the data collection methodology and preparation of the final ten profiles to complete the twenty required of the Oregon Studies. Phase six involved the final review of the twenty profiles, and finalization of the methodology as reported in this volume.

As previously stated, the profile form and the data collection methodology evolved simultaneously throughout the project. The profile development, of course, guided the preparation of the twenty profiles and represents a significant aspect of the methodology. The methodology of profiling has been included as Chapter 3 as a "Guide to Profile Writers." The substance of this document is an integral part of the overall methodology reported in this volume.

Though in retrospect the previously stated six developmental stages are identifiable, the evolution of the methodology was continuous throughout the life of the project. The following paragraphs provide illustrative examples of the evolutionary process.

The arrival at a structured, open-ended interview technique is the first case in point. Several forms of data collection were considered, including questionnaire, job inventory, and interview. To provide not only reasonably hard data but also to detect the flavor and dynamics of projects, the onsite personal interview and questionnaire were chosen. However, the style of interview was arrived at only after several variations were tried. For example, an extremely structured approach was attempted in which a list of tasks was handed to the interviewee, and he was asked if he actually performed them. If the answer was affirmative, further probing ensued. This technique was felt to be too leading and was therefore dropped. An extremely open technique was attempted in which the interviewee was simply asked to tell us about his work. This technique provided much conversation within which a few usable bits of data were contained. However, assuring any comparability of classes of data from one project to the next appeared to be an almost insurmountable problem. In addition, the extraction of data from the conversation was extremely time consuming. This technique, too, was deemed unacceptable.

A structured approach that did not lead the interviewee was finally accepted as the most practical. It was structured in that it named the area in which an interviewee was to respond--a specific output. In relation to that output, certain kinds of data were sought, but in an open manner. For example, in eliciting the standards an interviewee used for judging the acceptability of an output, the question might be, "How do you know that your output is adequate?" This minimized the degree to which the question tended to suggest or lead respondents. (An unacceptable question would be, "How do you measure the acceptability of your output?"--here, the use of a measure was suggested.)

A second case in point relates to the conceptual-empirical derivation of category sets. The conceptual framework (Schalock-Sell) established the gross categories of data to be gathered as: the outputs of work effort, the standards held for outputs, the operations required to produce specified outputs to specified standards, and the knowledges, skills, and sensitivities required to carry out those operations (enablers). In attempting to describe the outputs of projects, and the standards, tasks and enablers that related to them, it was necessary to establish a number of category sets to handle the complexity that was found. Category sets were developed as an extension of the conceptual framework and their utility was tested by fitting collected data into meaningful categories. These initial conceptual categories were not sufficiently complete to contain all data obtained. The sets were therefore expanded on the basis of data collected.

The collected data, and the expanded data sets were then used in modifying or more fully interpreting the conceptual framework. For example, the concept of "output" was initially expected to be used to categorize both "products" and "management responsibilities." However, the data collected supported expansion of the output categories to classify outputs as products, events, and conditions.

The methodology utilized by the Oregon Studies was initially focused by the Schalock-Sell conceptual paper (Vol. III), reviewed and modified over time in light of additional conceptual development and the ability of the methodology to deal with incoming data (Vol. IV). As such, this volume represents a set of procedures which have been systematically refined in order to sharpen the ability to define Educational RDD&E. The appearance of new variations will require new refinements. The next user of this set of procedures is encouraged to make additional modifications as they are seen to be necessary. The end result of such modification cannot help but be a set of procedures which are more capable of capturing that which is so familiar yet so unclear to many of us.

GUIDE TO MANUAL ORGANIZATION AND USE

Five functions are served by providing the descriptive information in this volume. First, there is a documentation of the complete procedures that were developed. Second, others wishing to employ the same or similar procedures have available to them a full set of "how-to-do-it" instructions, thus making the data portion of these studies replicable and open to expansion. Third, readers of the data-reporting volumes may acquire a better understanding of how the data were obtained, how to interpret such data, and how to understand their implications more effectively. Fourth, developers of training programs for RDD&E personnel may acquire the knowledge necessary for making their programs more responsive to the needs of the field, and fifth, others wishing to interrogate or extend the existing data bank may acquire the skills necessary to do so.

Characterizing this methodology in a familiar terminology is difficult, since it seems to represent a means of data collection which is unique within educational RDD&E. It appears inappropriate to characterize it in the terminology of either a job analysis approach, an anthropological approach, an historical approach, an inventory approach, a questionnaire approach, or an interview approach, because in large part each of these approaches in itself was seen as too limiting for the task at hand. Following an examination of each of these strategies, some aspects of each of them were utilized, but no one procedure was adopted carte blanche.

The methodology is designed to provide a comprehensive description of a project or organization at a particular point in time---a "snapshot" of that organization. If used with several projects or organizations within a domain, a composite view of the domain can be obtained. Subsequent applications of the methodology with the same organizations can produce data which, when compared with original descriptions, may indicate trends. The data resulting from employment of the methodology fall within the following classes:

1. Context
2. People
3. Outputs

Context (general project descriptors)

Since the context in which a project rests may account for considerable variance in what people do, it is necessary to describe the context in which a project's work is performed. The following information is sought:

1. Objectives of the project
2. Rationale for the project
3. Project timelines

4. Organizational structure
5. Relationships with parent and outside agencies
6. Funding base
7. Project setting
8. Project dynamics

People (personnel and work activity descriptors)

In order to understand the nature of work within a project as it relates to people, it is necessary to describe the project's personnel and the work activities they perform in relation to their backgrounds and the roles they fill. The following data are obtained through questionnaires:

1. Background of training and work experience people bring to their jobs.
2. Descriptions of jobs the people hold.
3. Support services and resources people require and use.
4. Perceived requirements associated with jobs held.
5. Emphasis given to various classes of work activities.

Outputs (output and work requirement descriptors)

In order to understand the nature of work within a project as it relates to the outcomes of work activity, the following sets of data are sought:

1. Outputs generated by the project
    a. Products produced
    b. Events carried out
    c. Conditions established
2. Work requirements associated with each output
    a. Standards by which the adequacy of an output or the processes generating it are judged
    b. Tasks (operations) performed in generating the output
    c. Enabling knowledges, skills, and sensitivities required to produce the output
3. The relationships of an output to the other outputs of a project.

The interactions of these data sets are displayed within Figure 1. The various combinations of these three prime classes of data are discussed in Volume I, Chapter 12 of the Oregon Studies.

The organization of the methodology manual

The three chapters of the methodology manual deal with the "how to" aspects of employing the methodology. The text of the manual

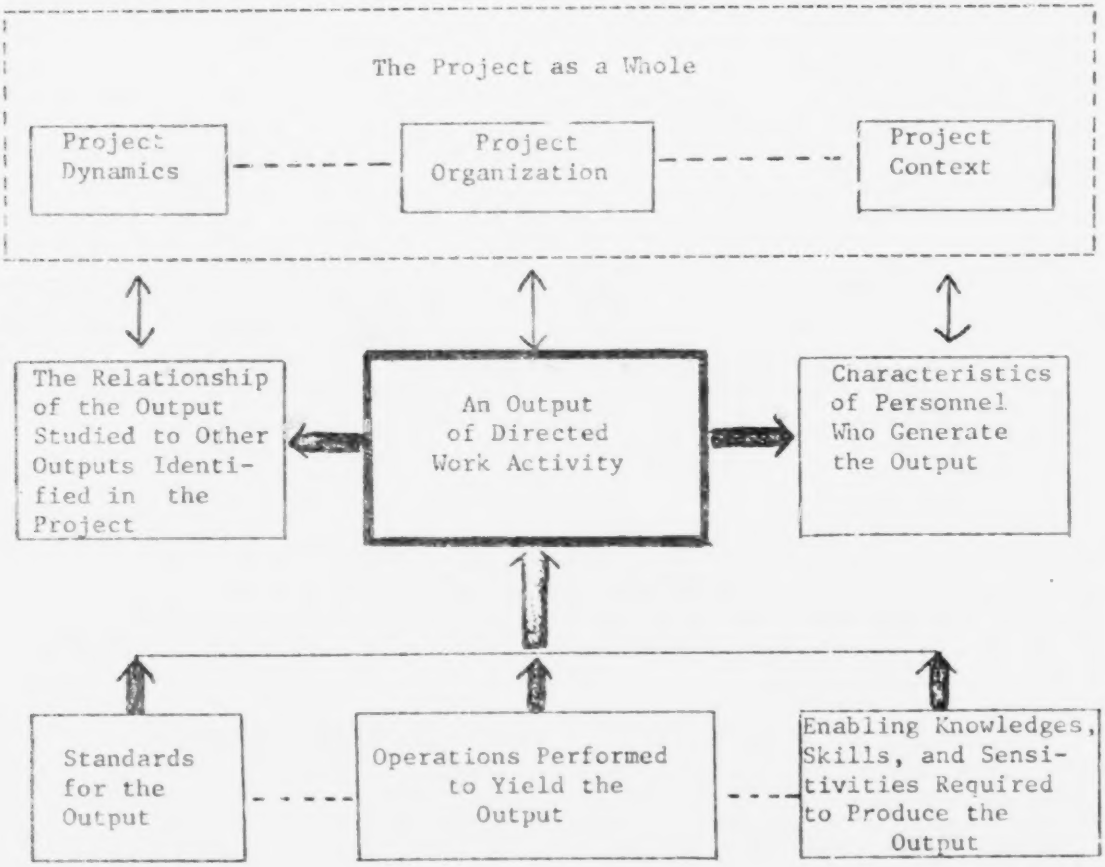

The Project as a Whole
Project Dynamics
Project Organization
Project Context
The Relationship of the Output Studied to Other Outputs Identified in the Project
An Output of Directed Work Activity
Characteristics of Personnel Who Generate the Output
Standards for the Output
Operations Performed to Yield the Output
Enabling Knowledges, Skills, and Sensitivities Required to Produce the Output

FIG. 1. Classes of information sought in describing a project, and their relationship to outputs of work effort.

closes with an epilogue which addresses the uses to which the methodology can be put. The scope of the chapters is illustrated in Figure 2. Each bold faced box illustrates a chapter.

The first chapter deals with site visitation activities from initial contact to closing out the visit. This chapter is intended to familiarize the reader with the steps necessary to replicate commensurate data collection and initial data reduction efforts. Appendices to the volume contain all necessary questionnaires, contact forms, etc.

The second chapter deals with data handling activities. Reduction, storage, and processing of data is conducted by individuals skilled in reduction of data into coding categories. Both the detailed description of the computerized data files and the computer data preparation procedures are documented in the appendices.

The third chapter deals with profiling a particular project, based on information and data obtained for that project. The computer is relied upon to produce certain standard types of summary analyses for the case profile. The methodology is designed so that a summarized form of data presentation represents approximately 50% of any case profile. The other 50% of the profile is made up of subjective impressions based on direct observations and tape recordings of interviews.

Figure 2 illustrates the general flow of activity through the complexities of the Oregon Studies Methodology. Each of the numbered boxes (activity blocks) in Figure 2 corresponds to a similarly labeled heading and associated text within the appropriate chapter. This figure, therefore, provides the reader with a comparative timeline chart for employing the methodology.

This diagram does not indicate the absolute time involved in activities nor does the size of any particular box indicate its relative importance. The horizontal positioning of a box does indicate, however, the comparative beginning and ending points of an activity block. For example, note that Activity Block 6 (Questionnaire Administration) and Block 7 (Onsite Data Reduction) occur, in part, during the same time frame as Block 5 (Site Visit by a Data Collection Team). Note further that Block 6 is finished prior to closing out a site visit and that Block 7 continues and is to be completed by the time the site visit is closed out.

Figure 2 illustrates the sequencing of major segments (activity blocks) of the methodology primarily for the purpose of easy reference to parts of the manual. Within each activity block, the outputs expected to emerge from that activity block have been identified. In the texts each activity block is introduced with an "Output Index," a listing of those outputs. The identifying descriptors of each output consist of a letter and number, a descriptive title, and a code. The letter indicates that the output is a product to be produced (P), an event to be carried out (E), or a condition to be established (C). The number is a sequential identity number for future reference (e.g., C-75). Following each descriptive title in the index is a two word code enclosed in parentheses. The first word of the code describes the output as a contracted-for output (focal), a part of a contracted-for output (component), or an output which makes easier the production of a contracted-for output or a component output (facilitating). The second word of the code indicates the function it serves as either setting policy guidelines (policy), orchestrating the available resources (management), or fabricating the ends being sought (production). The complete output index listing for the first output, for example, is "E-1 Selection of Site Contact Personnel (facilitating management)." This should be read as follows: Selection of Site Contact Personnel is an event which is a component part of the methodology and serves a management function.

Following the Output Index in each activity block is a graphic illustration of how each output is related to others in that activity block. This illustration is called an "Output Map."[2] The Output Map, unlike Figure 2, does not attempt to depict a process flow over time. Instead it is an attempt to demonstrate the interdependencies of one output to another. It will be clear to the reader that a number of outputs which are produced in the time frame provided by Figure 2 are not interdependent until taken out of that time frame.

The individual output maps can be combined to form an overall output map for Volume V (see Figure 3). The reader should be able to locate each activity block's output map within this figure and begin to understand the interdependencies which do exist.

When combined, the Output Indexes from each activity block provide an overall Output Index for the Oregon Studies Methodology as described herein.

Output Index of Volume V.

E-1 Selection of Site Contact Personnel (facilitating, management)
E-2 Explaining Purpose of Desired Visitation (component, management)
E-3 Establishing Rapport (component, management)
E-4 Data Collection During Initial Contact (component, production)

---

[1] For a detailed description of output indexing see Chapter 1 of this volume (Activity Block 2). More complete definitions of the above terms are contained within the Glossary for this volume.

[2] For a detailed description of output mapping see Chapter 1 of this volume (Activity Block 2).

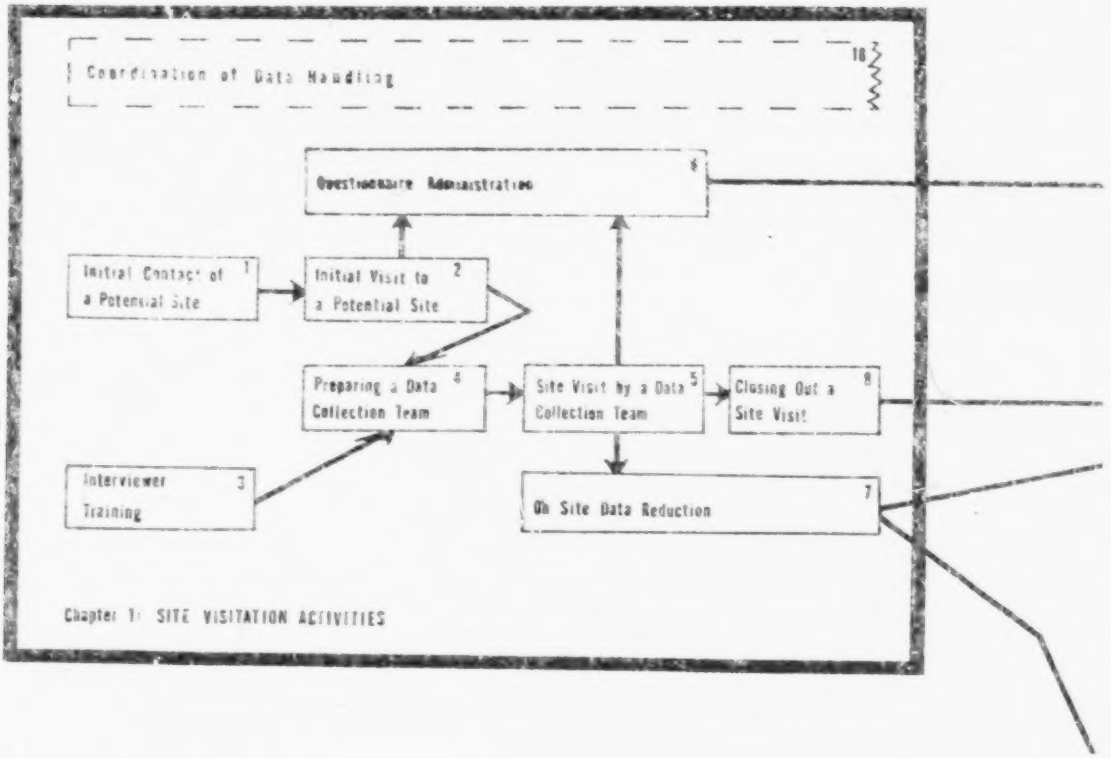
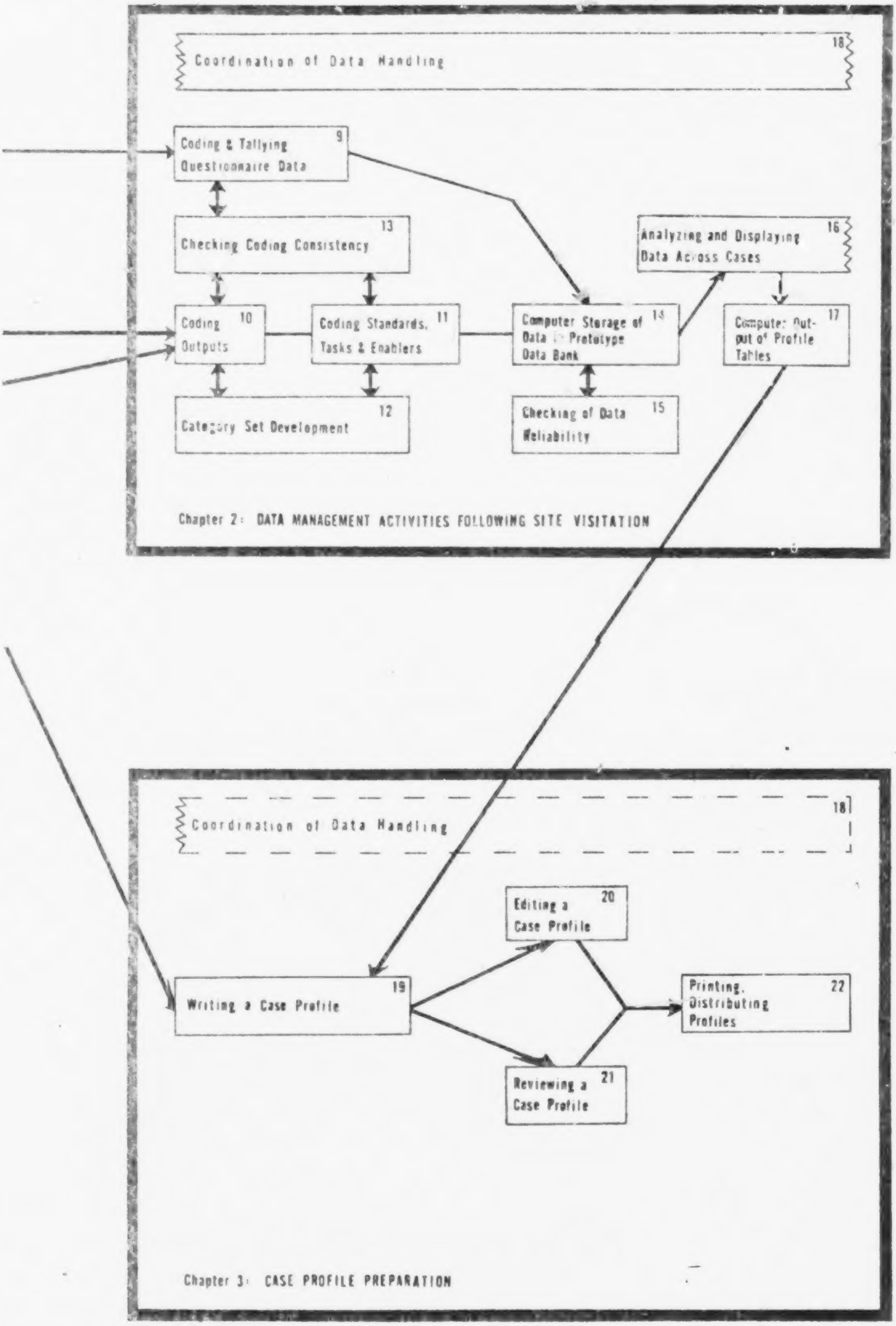

Coordination of Data Handling
18
Questionnaire Administration
6
Initial Contact of a Potential Site
1
Initial Visit to a Potential Site
2
Preparing a Data Collection Team
4
Site Visit by a Data Collection Team
5
Closing Out a Site Visit
8
Interviewer Training
3
On Site Data Reduction
7
Chapter 1: SITE VISITATION ACTIVITIES

FIG. 2. Guide to Volume V, Chapters and Activity Blocks


Coordination of Data Handling 18
Coding & Tallying Questionnaire Data 9
Checking Coding Consistency 13
Analyzing and Displaying Data Across Cases 16
Coding Outputs 10
Coding Standards, Tasks & Enablers 11
Computer Storage of Data in Prototype Data Bank 14
Computer Output of Profile Tables 17
Category Set Development 12
Checking of Data Reliability 15
Chapter 2: DATA MANAGEMENT ACTIVITIES FOLLOWING SITE VISITATION
Coordination of Data Handling 18
Editing a Case Profile 20
Writing a Case Profile 19
Printing, Distributing Profiles 22
Reviewing a Case Profile 21
Chapter 3: CASE PROFILE PREPARATION

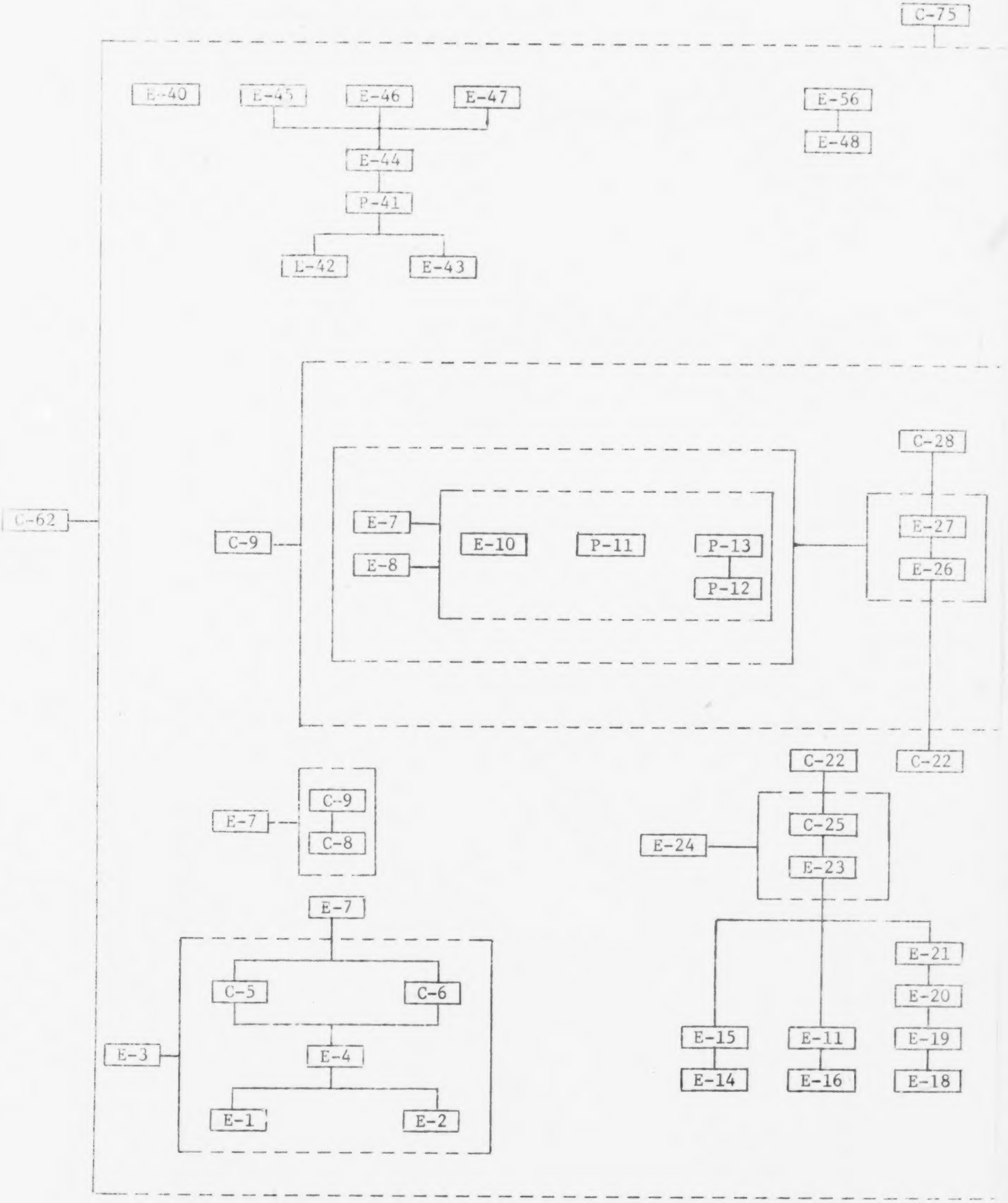
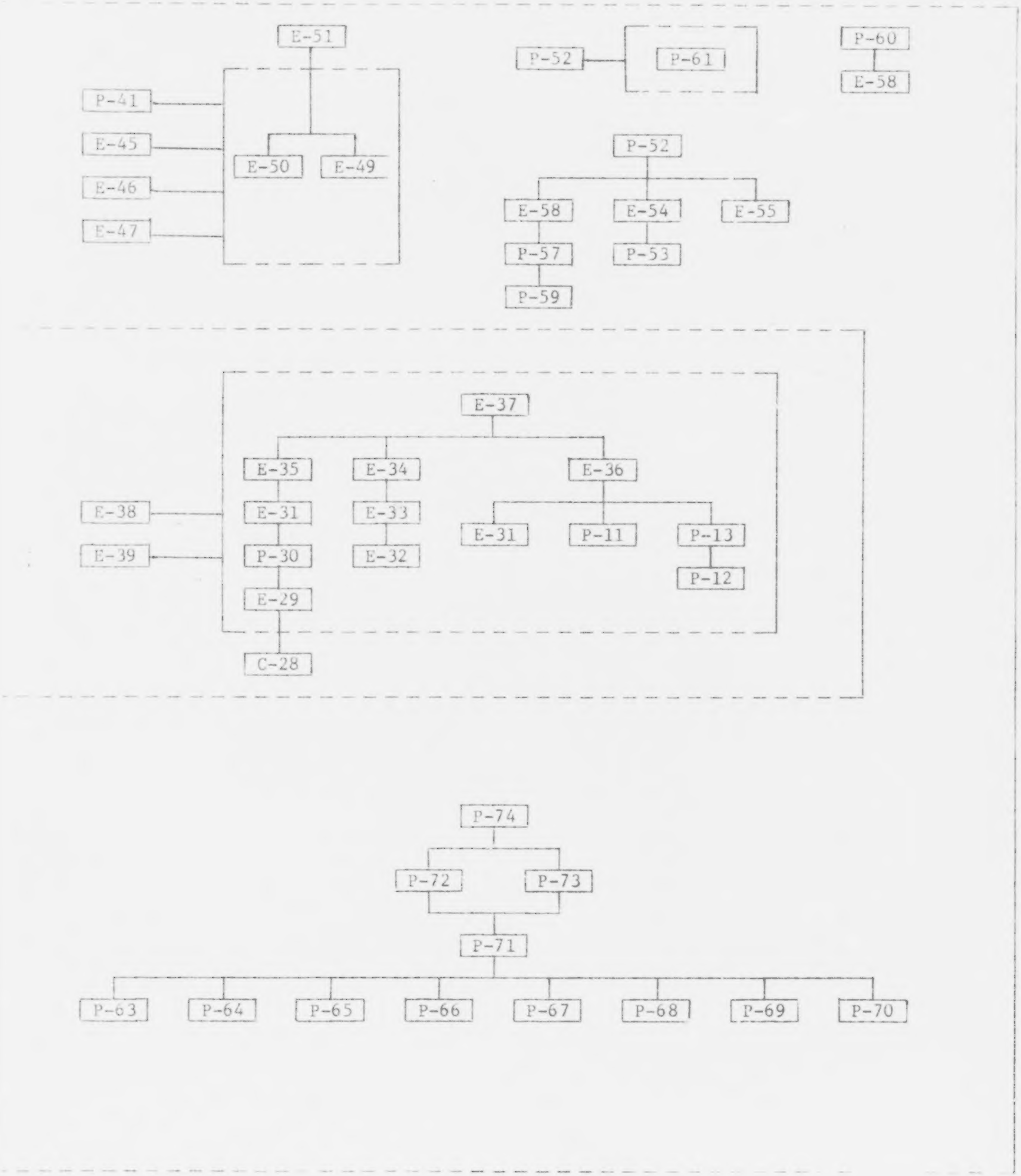

C-75
E-40
E-45
E-46
E-47
E-44
P-41
E-42
E-43
E-56
E-48
C-62
C-9
E-7
E-8
E-10
P-11
P-13
P-12
C-28
E-27
E-26
C-22
C-22
C-9
E-7
C-8
E-24
C-25
E-23
E-7
C-5
C-6
E-3
E-4
E-1
E-2
E-21
E-20
E-19
E-15
E-11
E-14
E-16
E-18

Figure 3. Volume V Output Map.


E-51
P-41
E-45
E-46
E-47
E-50
E-49
P-52
P-61
P-60
E-58
P-52
E-58
E-54
E-55
P-57
P-53
P-59
E-37
E-35
E-34
E-36
E-38
E-31
E-33
E-31
P-11
P-13
E-39
P-30
E-32
P-12
E-29
C-28
P-74
P-72
P-73
P-71
P-63
P-64
P-65
P-66
P-67
P-68
P-69
P-70

C-5 Approval for an Initial Site Visit (component, management)
C-6 Tentative Agreement to Participate as a Data Source (component, management)
E-7 Preparing for an Initial Site Visit (facilitating, management)
E-8 Decision as to Whether Site is an Appropriate Data Source (component, management)
C-9 Project Director's Approval for Data Collection Team Visitation (component, management)
E-10 Questionnaire Data Collection (component, production)
P-11 Initial Context Map (component, production)
P-12 Initial Output Index (component, production)
P-13 Initial Output Map (component, production)
E-14 Study of Onsite Data Gathering Operations (facilitating, production)
E-15 Group Discussion of Onsite Data Gathering Operations facilitating, production)
E-16 Demonstration of Interview (facilitating, production)
E-17 Critique of Demonstration (facilitating, production)
E-18 Practice Interview (facilitating, production)
E-19 Critique of Practice Interview (facilitating, production)
E-20 Practice Recapping (facilitating, production)
E-21 Critique of Practice Recapping (facilitating, production)
C-22 Skilled Interviewers (component, production)
E-23 Team Exercise (facilitating, production)
E-24 Critique of Team Exercise (facilitating, production)
C-25 Ability to Work as a Data Collection Team Member (facilitating, production)
E-26 Composing a Data Collection Team (facilitating, management)
E-27 Briefing a Data Collection Team (component, management)
C-28 Data Collection Team Prepared for Site Visit (component, production)
E-29 Team/Site Conference (component, production)
P-30 Selected Outputs for Interviews (component, production)
E-31 Interviews (component, production)
E-32 Delivering Questionnaires to Respondents (facilitating, management)
E-33 Explaining Questionnaires to Respondents (component, production)
E-34 Collecting Questionnaires from Respondents (component, production)
E-35 Recapping (component, production)
E-36 Finalizing the Output Map (component, production)
E-37 Contextual Debriefing (component, production)
E-38 Completeness Check (component, management)
E-39 Final Meeting (facilitating, management)
E-40 Coding Questionnaire Data (component, production)
P-41 Coded Outputs (component, production)
E-42 Confirmation of Data Collection Team's Coding (facilitating, management)
E-43 Output Coding (component, production)
E-44 Transfer of Output Codes to Recap Sheets (component, management)
E-45 Coding Standards (component, production)
E-46 Coding Tasks (component, production)

E-47 Coding Enablers (component, production)
E-48 Empirical Expansion of Category Sets (component, production)
E-49 Coding-Consistency Instrument Construction for the Data Collection Team (facilitating, management)
E-50 Coding-Consistency Instrument Construction for the Coding Resolution Team (facilitating, management)
E-51 Coding-Consistency Data Analysis (facilitating, management)
P-52 Prototype Data Bank (component, management)
P-53 Data File Specifications (facilitating, management)
E-54 Data File Creation (component, production)
E-55 Verifying the Computer Inputs (component, management)
E-56 Confirming the Logical Consistency of Items Coded to a Category (component, management)
P-57 Computer Program Descriptions (facilitating, management)
E-58 Computer File Manipulation (component, production)
P-59 Control Card Descriptions (facilitating, management)
P-60 Examples of Retrieval Requests (component, production)
P-61 Computer Generated Profile Tables (component, production)
C-62 Coordinated Handling of Data (component, management)
P-63 Introductory Pages of Profile (component, production)
P-64 Profile Chapter I: Overview (component, production)
P-65 Profile Chapter II: Parameters of the Project (component, production)
P-66 Profile Chapter III: Summary of the Data (component, production)
P-67 Profile Chapter IV: Supplementary Data (component, production)
P-68 Profile Chapter V: Project Dynamics (component, production)
P-69 Profile Chapter VI: Implications for Training (component, production)
P-70 Profile Appendices (component, production)
P-71 Initial Case Profile (component, production)
P-72 Edited Initial Case Profile (component, production)
P-73 Reviewed Initial Case Profile (component, production)
P-74 Final Case Profile (component, production)
C-75 The Ability to Replicate Data with the Oregon Studies Methodology (focal, production)

Resources required to effect the methodology

Staffing to effect this methodology may be organized around the following functions:

(a) Coordinators of major segments of activity.

(b) Interview teams, team leaders, and other institutional representatives who visit sites in the field.

(c) Trainers of interviewers.

(d) Data coders.

(e) Computer programmers and operators.

(f) Profile writers.

(g) Profile editors.

(h) Data analysts.

The scope of the effort which utilizes this methodology will dictate the number of people necessary for the accomplishment of the above functions. General qualifications of persons who are to perform these functions are reasonably obvious from their titles: coordinators, interviewers, programmers, writers, coders, editors, etc. Familiarity with the general nature of work performed by educational RDD&E projects is a most desirable qualification for these persons. Case profile writers and data coders most particularly need an understanding of the total domain of RDD&E, to place data within their appropriate contexts and to understand the implications and interrelationships of such data.

As a further aid in obtaining the complete implications and significance of a project, a case profile writer also serves as a member of the interview team that visits the project site. Experience in the interviewing process is also highly advisable for both data-collection coordinators and data coders. Figure 4 illustrates one feasible organizational pattern of these job functions.

The data collected within the Oregon Studies were summarized and placed upon a computerized data file system. The data reduction, sorting, and retrieval programs are all written in FORTRAN IV computer language. The computer system required to employ this methodology may utilize either disc or tape capabilities. All operations programs, data file names, dimensions and contents are included in the volume.

The system was designed to be maximally flexible because the specific directions to be taken in the Oregon Studies were not known at the time of the data system design. The user of the system will therefore find that any number of system modifications can be made in order to accelerate retrieval time for specific data items.

Employment of this methodology requires normally available clerical support with extensive typing and duplicating facilities. It further requires the use of portable battery-powered tape recorders.

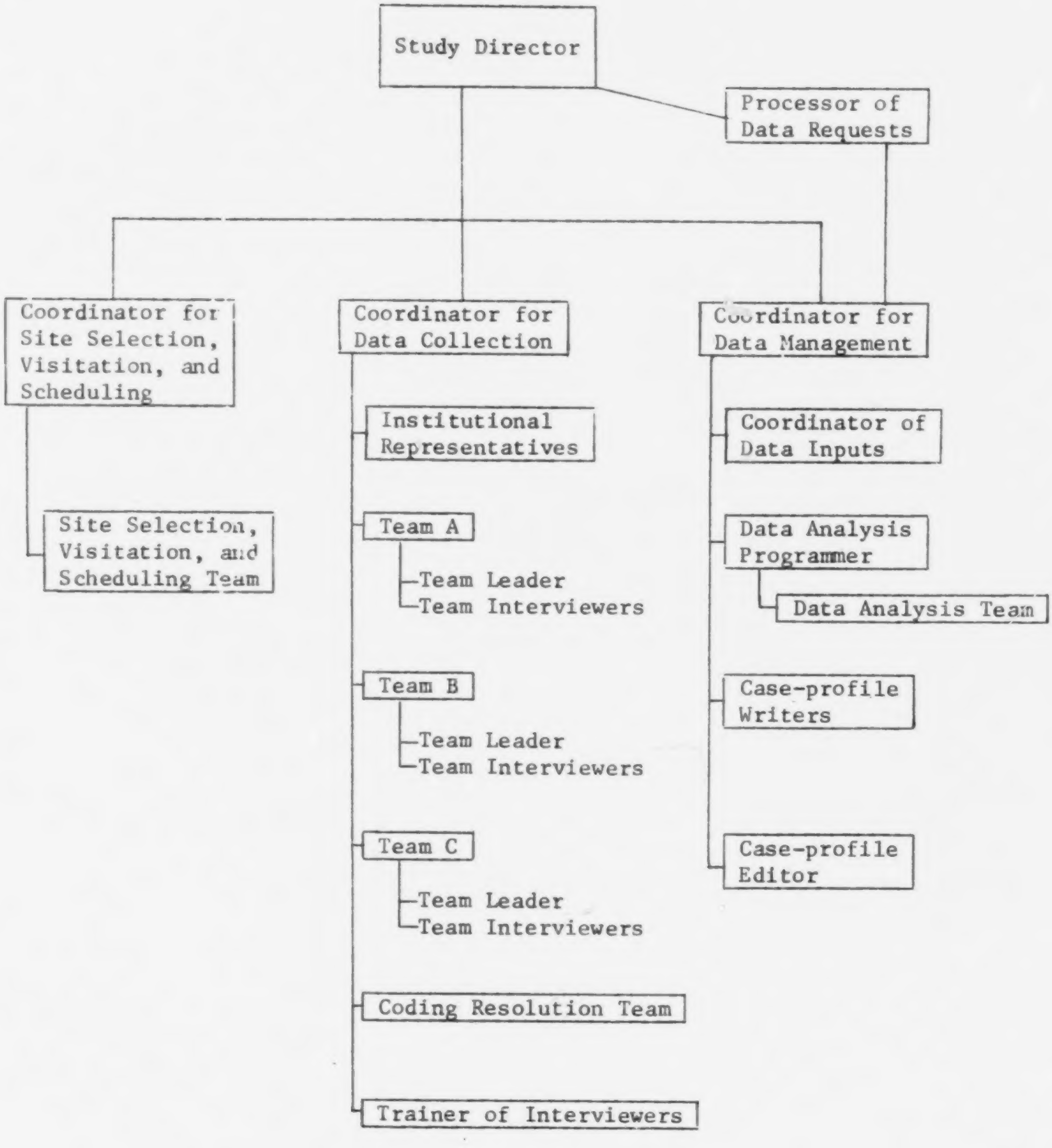

Study Director
Processor of Data Requests
Coordinator for Site Selection, Visitation, and Scheduling
Site Selection, Visitation, and Scheduling Team
Coordinator for Data Collection
Institutional Representatives
Team A
Team Leader
Team Interviewers
Team B
Team Leader
Team Interviewers
Team C
Team Leader
Team Interviewers
Coding Resolution Team
Trainer of Interviewers
Coordinator for Data Management
Coordinator of Data Inputs
Data Analysis Programmer
Data Analysis Team
Case-profile Writers
Case-profile Editor

FIG. 4. Organization of functional positions for data collection and data management.

Chapter 1

SITE VISITATION ACTIVITIES

This chapter of the methodology volume is focused on data collection processes.[1] Its intent is to provide sufficient information to allow the reader to engage in collecting data from a preselected site. Included is detail on the procedural steps (a) during the initial site contact, (b) in making the initial site visit, (c) in preparing a team of data collectors for the site (interview) visit, (d) in conducting a site (interview) visit, and (e) in closing out a site in terms of completeness in data collection and creating a positive affect with the site staff. As can be seen from Figure 3, Chapter 1 is composed of Activity Blocks 1 through 8 and Block 18. While Activity Block 18 has influence over the first 8 blocks, it will be discussed in Chapter 2 of this volume. The contents of this chapter then are Activity Blocks 1 through 8.

Activity Block 1: Initial Contact of a Potential Site.

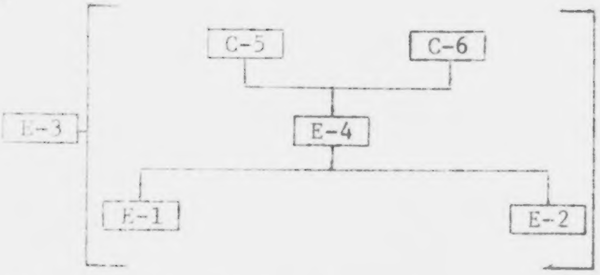
Output Index:

E-1 Selection of Site Contact Personnel (facilitating, management)
E-2 Explaining Purpose of Desired Visitation (component, management)
E-3 Establishing Rapport (component, management)
E-4 Data Collection During Initial Contact (component, production)
C-5 Approval for an Initial Site Visit (component, management)
C-6 Tentative Agreement to Participate as a Data Source (component management)

---

[1] The problem of site selection has been purposefully excluded from this volume, since it was felt that the problem of site selection must be addressed by the particular investigating agency choosing to use the methodology. The sample of sites selected for the Oregon Studies are described in Volume I along with the selection criteria and variables used in the selection process.

Output Map:



E-1 Selection of Site Contact Personnel

When a site has been identified as a potential source of data, an initial telephone contact is made with the site. This initial contact provides the first opportunity for interaction between the investigating agency and the potential site.

The agency representative making this contact must be a person who is not only knowledgeable about all phases of the methodology but also one who can speak (make binding agreements) for the investigating agency.

In making the initial site contact, any of the following personnel can be utilized (see Figure 4):

Study Director
Coordinator for Site Selection, Visitation, and Scheduling
Coordinator for Data Collection

The most desirable choice, from a continuity viewpoint, is the Coordinator for Data Collection.

E-2 Explaining Purpose of Desired Visitation, and E-3 Establishing Rapport

Prior to making the telephone contact, it is helpful for the individual to become familiar with the background of the prospective site and/or project. Any number of information sources can be used to obtain such background knowledge. A project proposal can be one important source of data. It can provide preliminary information about the number of personnel involved in a project, its duration, the size and scope of proposed activities, the name and telephone number of an individual who can be contacted, an indication of the scope of work to be completed, and an indication of the focus for the overall project, i.e., research, development, diffusion, and/or evaluation. Promotional brochures and articles written by staff members may also provide substantive information regarding the work of particular projects.

During initial contact it is helpful to be familiar with the project in question in order to facilitate communication with the individual contacted. A good deal of information can be exchanged in the initial contact. Key elements needing immediate discussion include (a) the purpose of data collection; (b) why the site was contacted; (c) how the data are to be reported; and (d) the constraints which will be placed upon the site if they agree to participate.

It is essential for the site to understand the constraints placed upon the staff members chosen for interview. The most important of these constraints is the amount of time needed for interviewing, since each interviewee will be expected to contribute a minimum of 2 hours for the purpose of data collection. Occasionally this minimum of 2 hours may need to be expanded to as much as 4 hours (with site concurrence), but this is the exception and not the rule. For purposes of scheduling, the prospective site should plan on having the interview team on site for approximately 1 week. Not every site contacted may have either the time or the inclination to allow such an extensive amount of staff time to be utilized. This is particularly true in those projects which are in their initial phases or are rushing to finalize some set of activities.

E-4 Data Collection During Initial Contact

Form 01[2] is designed to expedite the contact process. This form provides a permanent record of such critical data elements as the project director's name, the contact individual, subcontractors who also may have to be contacted, relevant addresses, telephone numbers, etc. Though primarily used for initial contact purposes, the last attached page on Form 01 should be completed every time a contact is made with a site. This procedure enables an individual who is about to make a site contact to review the records of prior contacts to insure against duplicating business which has already been discussed with personnel on the site. Since any data collection effort of the size and scope described within this volume places a number of constraints on a site to be visited, it is critical that the time spent in talking with personnel on the site be as free of unnecessary redundancy as careful planning can accomplish.

Access to Form 02 during the initial telephone conversation has proved to be an expedient to the data collection process. Many of the information elements contained in Form 02 can be naturally and unobtrusively brought into a line of conversation. If written background data have been accurate and at all complete, Form 02 can be partially completed prior to the telephone contact and verified during the initial conversation.

The initial phone contact also provides an opportunity to clarify the focus of the project to be visited.

C-5 Approval for an Initial Site Visit, and
C-6 Tentative Agreement to Participate as a Data Source

If the proposed site is willing and appears to be a viable source of data, the steps outlined above should result in obtaining a verbal agreement to participate as a source of data and establishing a firm date for an initial site visit.

---

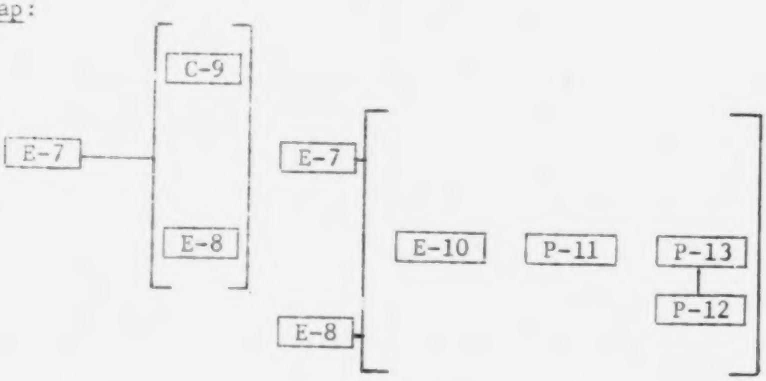
[2] All forms and worksheets referenced in this volume are located in Appendix 1.

Activity Block 2: Initial Visit to a Potential Site.

Output Index:

- E-7 Preparing for an Initial Site Visit (facilitating, management)
- E-8 Decision as to Whether Site Is an Appropriate Data Source (component, management)
- C-9 Project Director's Approval for Data Collection Team Visitation (component, management)
- E-10 Questionnaire Data Collection (component, production)
- P-11 Initial Context Map (component, production)
- P-12 Initial Output Index (component, production)
- P-13 Initial Output Map (component, production)

Output Map:



E-7 Preparing for an Initial Site Visit

It is advisable, though not essential, for the institutional representative who made the initial telephone contact to be included as one of the two staff members to initially visit a potential site. The other staff member should be the person who will assume leadership responsibilities for the data collection team which will return to the site for the major data collecting process.[3] (The entire data collection team need not be identified at this time.)

All travel arrangements required throughout the employment of the methodology should be made by one individual (essentially a secretarial responsibility). A master schedule board should be readily available for review by all project personnel. Such a master schedule can be organized using "time in days" and "site name" as the axis dimensions. While keeping such a table up to date consumes time, it provides a degree of closure for the individual interviewer making repeated trips to several sites. Following the scheduling of an initial site visit, the Coordinator of Data Inputs should be charged with adding to the master time schedule the date for the proposed visit, data collection team schedules, and personnel involved.

---

[3] This arrangement of staff allows the minimum number of exchanges of data, both summarized and impressionistic. During the course of the Oregon Studies this combination of people was often but not exclusively utilized.

Providing materials needed for the institutional representatives' onsite visitation is the responsibility of the Coordinator of Data Inputs. These materials might include:

- Form 01 (Project Contact Record), started by the site-selection team.
- Form 02 (Project Questionnaire).
- Forms 03 (Job/Task Inventory) and 04 (General Position Activities Questionnaire). Forms 03 and 04 should be available for each project staff member who is to be contacted later by the interview team. (It may be decided to provide the forms prior to the team's visitation, particularly when all staff can be readily identified, e.g., when the project contains only 3 or 4 personnel.)
- Forms 05-A and 05-B (Output Recap: Index and Coding).
- Copies of any materials collected about the project to date.
- Worksheets 08 (Dissemination Brochure), 11 (Contextual Cue Items), and 17 (Checklist of Project Data Inputs).

In some instances, initial site visits will be conducted when only one individual from the proposed site is available. It is preferable for some or all of the staff of the proposed site to be involved during the initial site visit. This provides an opportunity for rapport to be extended beyond the individual holding administrative responsibilities for the site in question.

If the information collected on Form 01, Form 02, proposals, dissemination brochures, etc. has been thoroughly read and understood by the team members, a common framework from which conversation can be built is provided and the probability of establishing rapport is greatly enhanced.

It is essential that the individuals making the initial site visitation have in their possession complete and up-to-date information describing the methodological limitations and constraints to be placed upon the proposed site. (This presented problems for the Oregon Studies because of methodological changes which continued to be made during the duration of the project.) This is particularly true in terms of the amount of time the site must contribute for purposes of interviewing.

E-8 Decision as to Whether Site Is an Appropriate Data Source

It is possible for the initial site-visitation team to make a judgment on the basis of the initial site visit as to whether or not a visit by the data collection team is appropriate. The degree of appropriateness may be assessed in terms of (a) the cooperative nature of the staff, (b) the availability of the staff, (c) the possibility of scheduling a site visitation within a reasonable length of time, and (d) a subjective judgment on the extent and nature of the data to be obtained. (A few sites were eliminated from the Oregon Studies sample at this stage of contact, primarily due to scheduling difficulties.)

C-9 Project Director's Approval for Data Collection Team Visitation

Assuming that the site visitation team believes the individual site represents a potential source of data, permission must be formally obtained from the project director, or an individual having authority to make such a binding commitment.

E-10 Questionnaire Data Collection

If the decision to follow through with the site is made, the initial site visit provides an opportunity to collect several classes of critical data. The completion and confirmation of Form 02 at this time is essential as it provides information needed for the data collection team visitation. This form should be completed during the initial site visit and collected by the visitation team.

Form 03 (Job/Task Inventory) and Form 04 (General Position Activities Questionnaire) are instruments relating to individuals. These forms may be completed during the initial site visit, distributed at that time and collected when the data collection team arrives on site, or administered and collected by the data collection team. A minimum requirement during the initial site visit is to obtain permission to administer these two forms.

P-11 Initial Context Map

In addition to the collection of questionnaire data (Forms 02, 03 and 04), an essential part of the site visit by the institutional representatives is the collection of information for the initial versions of the Context Map, Output Index and Output Map. (These latter two outputs will be discussed separately.) The concept of a contextual map is used to provide further insights into additional classes and sources of data. The contextual map (see Figure 7) is designed to illustrate the environment in which the particular site resides.

Several revisions of the contextual map usually need to be produced before a satisfactory version is completed. Figures 5, 6, and 7 present a sequence of map production.

Figures 5, 6, and 7 demonstrate that the environment internal to the organization, the environment in terms of linkages with subcontractors, and the environment in terms of linkages to funding source should all be represented in a contextual map.

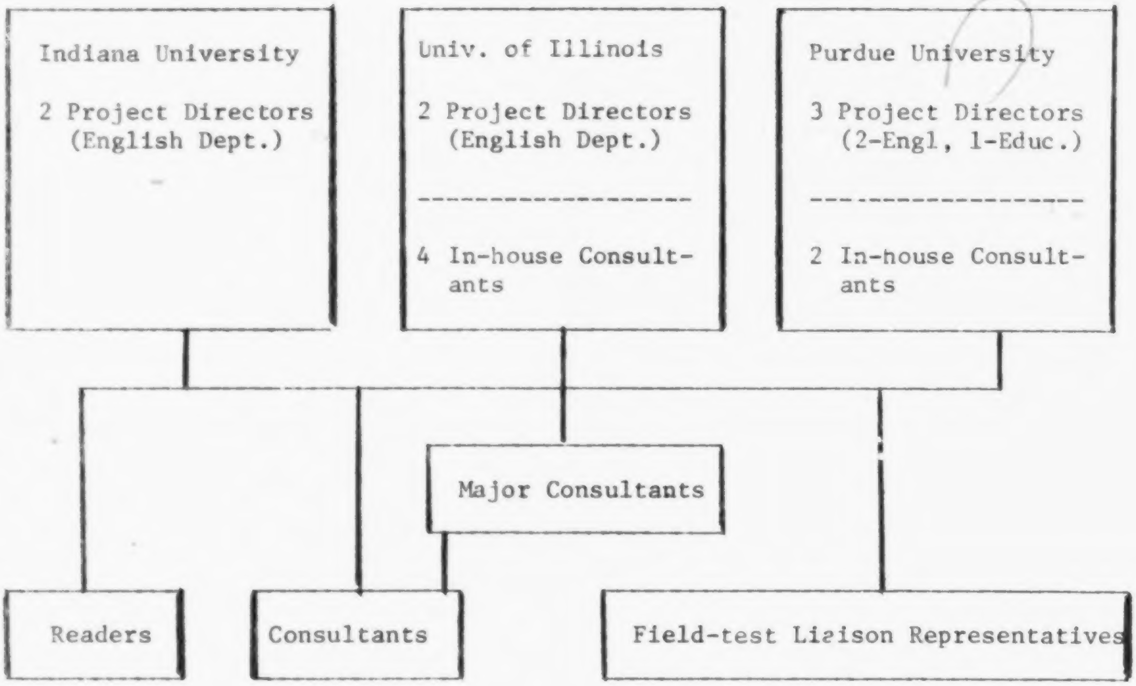

Indiana University
2 Project Directors
(English Dept.)
Univ. of Illinois
2 Project Directors
(English Dept.)
4 In-house Consultants
Purdue University
3 Project Directors
(2-Engl, 1-Educ.)
2 In-house Consultants
Major Consultants
Readers
Consultants
Field-test Liaison Representatives

FIG. 5. An initial version of a contextual map.

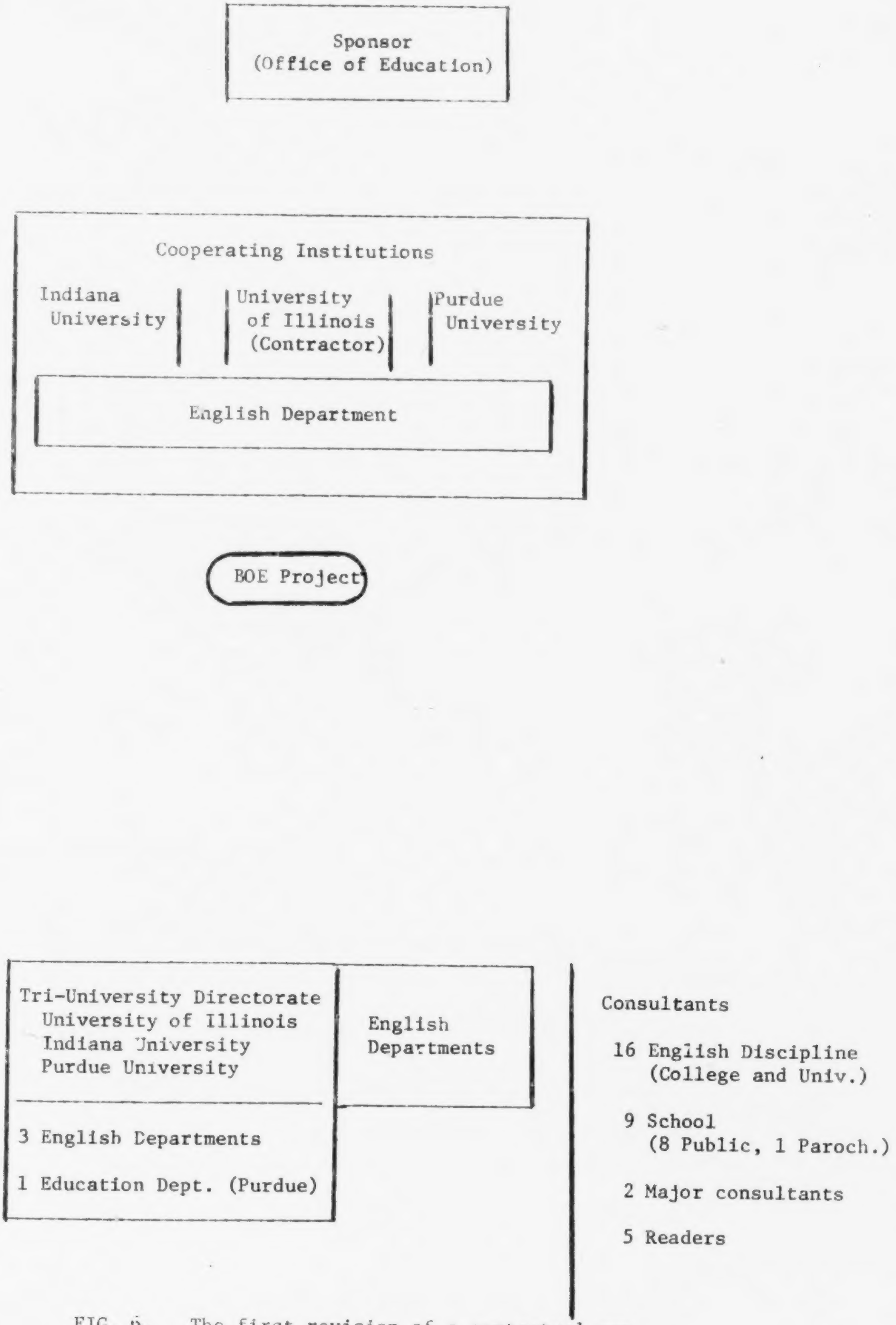

Sponsor
(Office of Education)
Cooperating Institutions
Indiana University
University of Illinois (Contractor)
Purdue University
English Department
BOE Project
Tri-University Directorate
University of Illinois
Indiana University
Purdue University
3 English Departments
1 Education Dept. (Purdue)
English Departments
Consultants
16 English Discipline (College and Univ.)
9 School (8 Public, 1 Paroch.)
2 Major consultants
5 Readers

FIG. 6. The first revision of a contextual map.

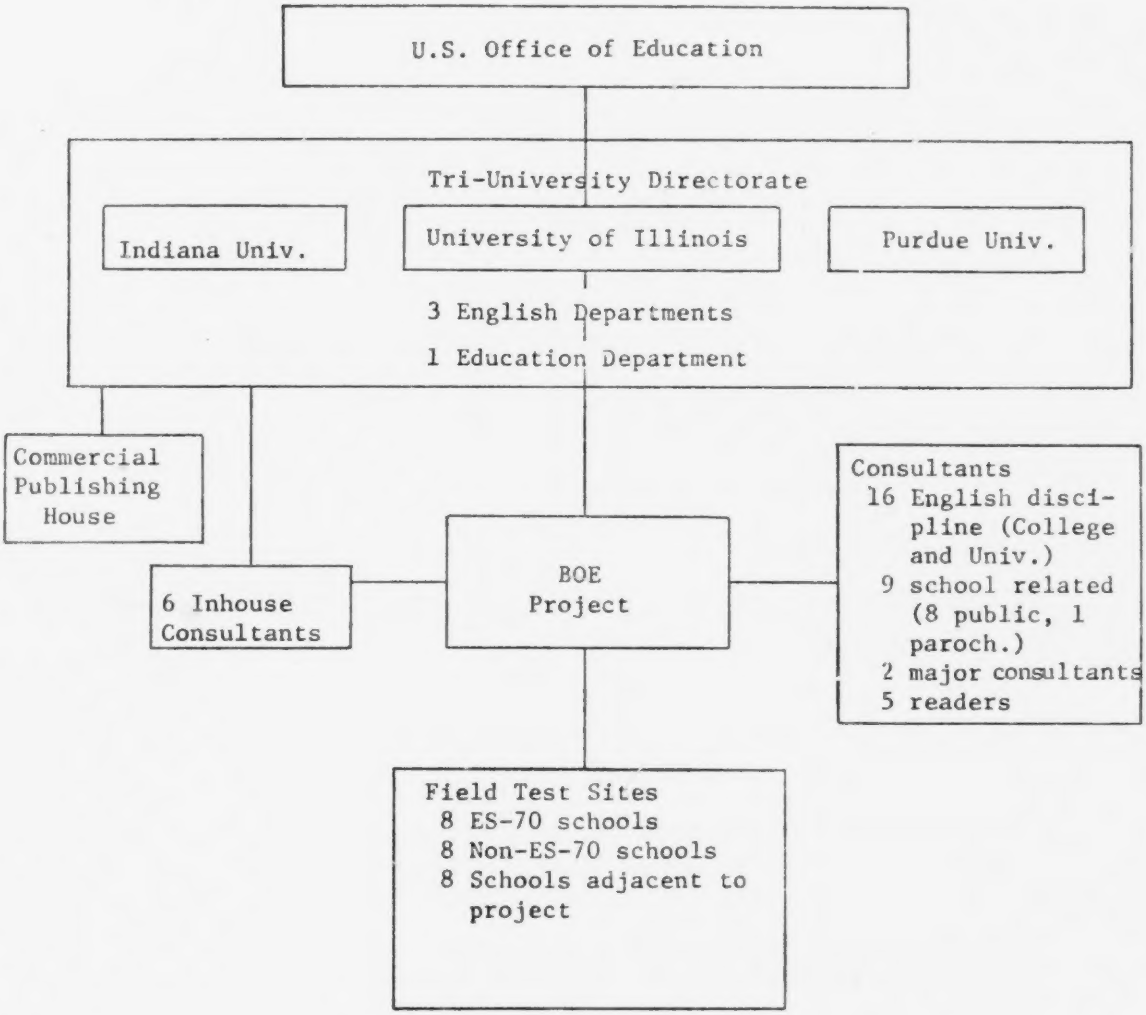

U.S. Office of Education
Tri-University Directorate
Indiana Univ.
University of Illinois
Purdue Univ.
3 English Departments
1 Education Department
Commercial Publishing House
6 Inhouse Consultants
BOE Project
Consultants
16 English discipline (College and Univ.)
9 school related (8 public, 1 paroch.)
2 major consultants
5 readers
Field Test Sites
8 ES-70 schools
8 Non-ES-70 schools
8 Schools adjacent to project

FIG. 7. Final version of a contextual map.

The contextual map provides a framework against which the data collection team can reflect responses obtained from project staff members. Many comments during an interview can be better understood when some understanding of the environment or context within which the project has to function is available to all team members. Further, such a representation should also ultimately help the reader of the case profile prepared for each site. The initial site visitation provides an ideal time for the first approximation to such a contextual map to be generated.

The outputs from the initial site visitation can vary, dependent upon a number of factors. In the optimum circumstance, these outputs would include a completed Form 01, a completed Form 02, permission to administer Forms 03 and 04, an initial output index, an initial output map, and an initial contextual map. In addition, firmly established interview dates, recommendations as to accommodations, and recommendations as to special considerations, including mode of transportation to and from the site, should be set.

A constraint which may affect the above output significantly is the amount of time the particular site is able to devote to the initial site visit. To accomplish all of the above on a medium size site, approximately 4 hours of directed conversation is necessary. If such time is not available or the complexity of the site does not permit, alternative procedures may be necessary.

P-12 Initial Output Index

The outputs from any particular site are organized into an output index.

Definitions:

- Output - an identifiable outcome of targeted work activities contributing to the realization of project goals.
- Output index - the outputs that are associated with a particular project listed according to the structure of output they represent.

The terms product, event, and condition represent three identifiable structures of outputs. These terms are discussed in a later part of this section.

Definitions:

- Product - a tangible or "hard" outcome of work effort that is transportable at a given point in time.
- Event - an outcome of work effort that results in the occurrence of an observable transaction or set of behaviors.
- Condition - an outcome of work effort that creates a desired circumstance expected to endure within the life of a project, or as a result of it.

If sufficient documents are available prior to the initial site visit, a tentative listing of outputs can be constructed. Such listings focus upon specific contracted-for products that are typically cited in a project proposal. Distinction of output classes is usually not possible at this stage. The following is an actual output index which was developed prior to one of the Oregon Studies visitations.

01. Statistical description of the data.
02. Description of the sample.
03. Description of the properties of variables.
04. Computer programs.
05. Growth figures and patterns.

06. Model of growth.
07. Graphic illustrations of cause/effect among variables.
08. Matrix of postulated effects.
09. Simulation model.
10. Field case studies.

11. Preliminary information.
12. Comparison with simulation model.
13. Observational data.
14. Empirical information.
15. Technical papers. (5 in number)
16. Monographs. (3 in number)

In operational terms, the foregoing list of outputs is the result of intensive review of the available materials from a potential project site. Procedurally a particular site is characterized in terms of its outputs, based upon documents which were available prior to the site visitation. During the initial visit this list must be confirmed by the members of the site, with additions and deletions being made at their recommendation. Particular attention must be devoted to the identification of significant events and conditions, these being outcomes of project effort that are not typically identifiable from a reading of the project proposal.

There are several points to keep in mind in the construction of the output index which have come to light from experience. Among them are:

1. If descriptive information is available prior to the time of the initial site visit, some insights as to the outputs of the particular site may be built into a first approximation of the initial output index. This initial "at-home" attempt at identifying outputs can, in many instances, save a considerable amount of site and project staff time. On the other hand, the printed material available from a site may provide little, if any, information necessary for the determination of outputs.

2. During the initial site visit it is helpful for the institutional representatives to have a portable tape recorder available so that the discussion of project outputs can be captured for later review and refinement. Documents which

may help the interviewer focus his questioning include project time lines and statements of objectives. If the interviewer follows the logical flow of time through a project, he must be alert to avoid missing outputs which often do not appear in such time orientations. The development of "staff morale" or "parental cooperation" are examples of two output conditions which might not normally be represented in a time-oriented chart.

3. It is helpful (and will save a considerable amount of time later) for the project staff to be available during the determination of outputs. Frequently the project staff members are able to make explicit what additional types of outputs there are, and to clarify situations and circumstances which have occurred throughout the project. The initial visitation team must use their best judgment as to how much of the site's time should be used for explicit and detailed clarification of outputs. While sufficient data must be obtained to determine the number of personnel it will take to interview a representative sample of the site, it is not necessary that the list of outputs be exhaustive of those produced by a project at this point in time.

4. In organizing outputs into an output index, it will often be found that the list of products is fairly complete, while the list of events and conditions remain fairly sparse. This will be true particularly in situations where a time-line type of approach at identifying outputs has been used. In organizing the output index, the names of project staff members having a principal role in the realization of the output should be identified and associated with each of the outputs in the index. In many situations, more than one staff member will be responsible for or have knowledge about the same output.

P-13 Initial Output Map

Based upon the output index, which is reviewed and modified as need be on the site, an initial attempt is made at developing an output map.

Definition:

- Output map - a schematic ordering of project outputs in accordance with their interdependent relationships.

In some instances it will be possible prior to the time of site visitation to construct an output map as well as an output index. In other instances the documentation will not allow the interdependencies to be identified. However, while on site, an initial output map must be developed and verified by the staff participating in the initial site visit. Without this map it will not be possible to assign interviewers to staff, identify the time it will take to visit a site, identify those outputs to be interviewed about, and come to understand the intricacies of the data which will be forthcoming. The output map is not an attempt at displaying time-related dependencies. Its purpose is the display of outputs and their interdependencies. The factor of time is only incidental in this map. It does not attempt to display an optimal sequence of completion of various outputs. It does display the effects or influences of outputs upon one another. The desired effect of reading an output map is a "picture" of the project being discussed in terms of the dependency relationships among the outputs the project seeks to achieve.

Guidelines for the development of an output map

The relationships between outputs are so diverse that only general guidelines can be stated concerning them. As aids to the reader a number of figures follow to indicate sequential modifications which may need to be made in the construction of an output map. Figure 8 is a representation in pictorial form (i.e., output map) of the output index previously presented. The map is reviewed by site personnel and modified to their specifications. The modifications involved in the construction of an output map are represented in the sequence of Figures 9, 10, and 11. Figure 9 is a map developed on the basis of documentation available prior to the initial site visit. Figure 10 is the same map modified on the basis of data at the end of the initial site visit. Figure 11 is a map resulting from review and modification of the cross section of individuals interviewed on site, and is in the form that would subsequently appear in the case profile written for that site (see Chapter 3).

The following points will provide some additional direction in developing an output map:

1. The output map does not intend to order time in relation to the outputs. As such, it is not a short-cut type of PERT chart. Time is incidental to the purpose of the output map. The dependencies of one output to another represent the critical aspects which the map attempts to demonstrate. A PERT chart, on the other hand, typically will attempt to identify the processes necessary for the production of an output and their interrelationships in time.

2. The output map is focused on demonstrating the functional dependencies between three classes of outputs (i.e., products, events and conditions), not their dependencies in terms of production schedules or time deadlines.

3. The output map is developed generally through a series of stages, the initial output map being generated while the initial site-visitation team is onsite. This enables direct interaction to take place between the project staff and the initial site-team. Some beginning elements of an output map have been recognized prior to an initial site visit. The documentation available for review prior to site visits is, for the most part, not capable of providing the information necessary to derive a representative output

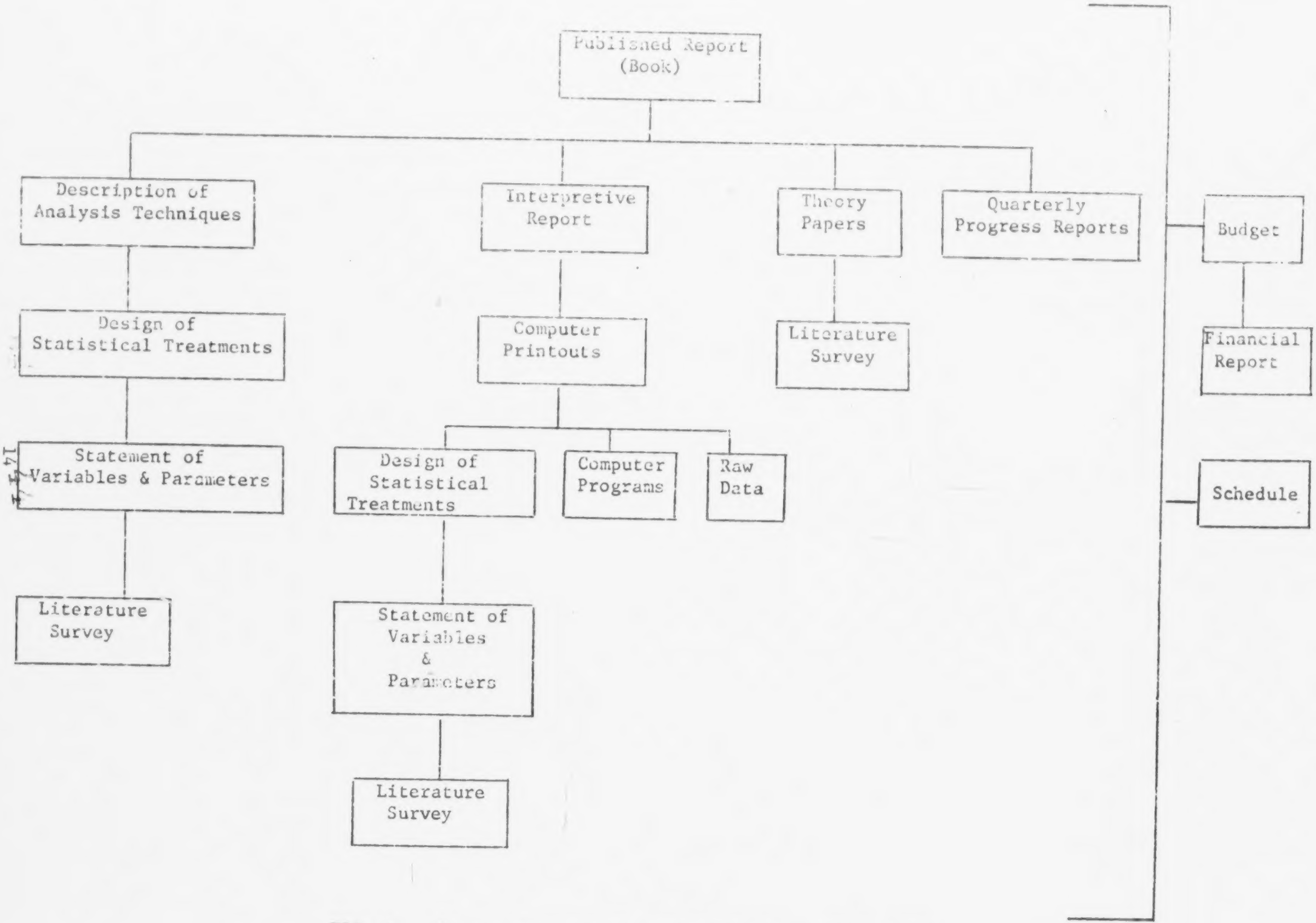

Published Report
(Book)
Description of
Analysis Techniques
Design of
Statistical Treatments
Statement of
Variables & Parameters
Literature
Survey
Interpretive
Report
Computer
Printouts
Design of
Statistical
Treatments
Statement of
Variables
&
Parameters
Literature
Survey
Computer
Programs
Raw
Data
Theory
Papers
Literature
Survey
Quarterly
Progress Reports
Budget
Financial
Report
Schedule

FIG. 8. Output map derived from tentative output index

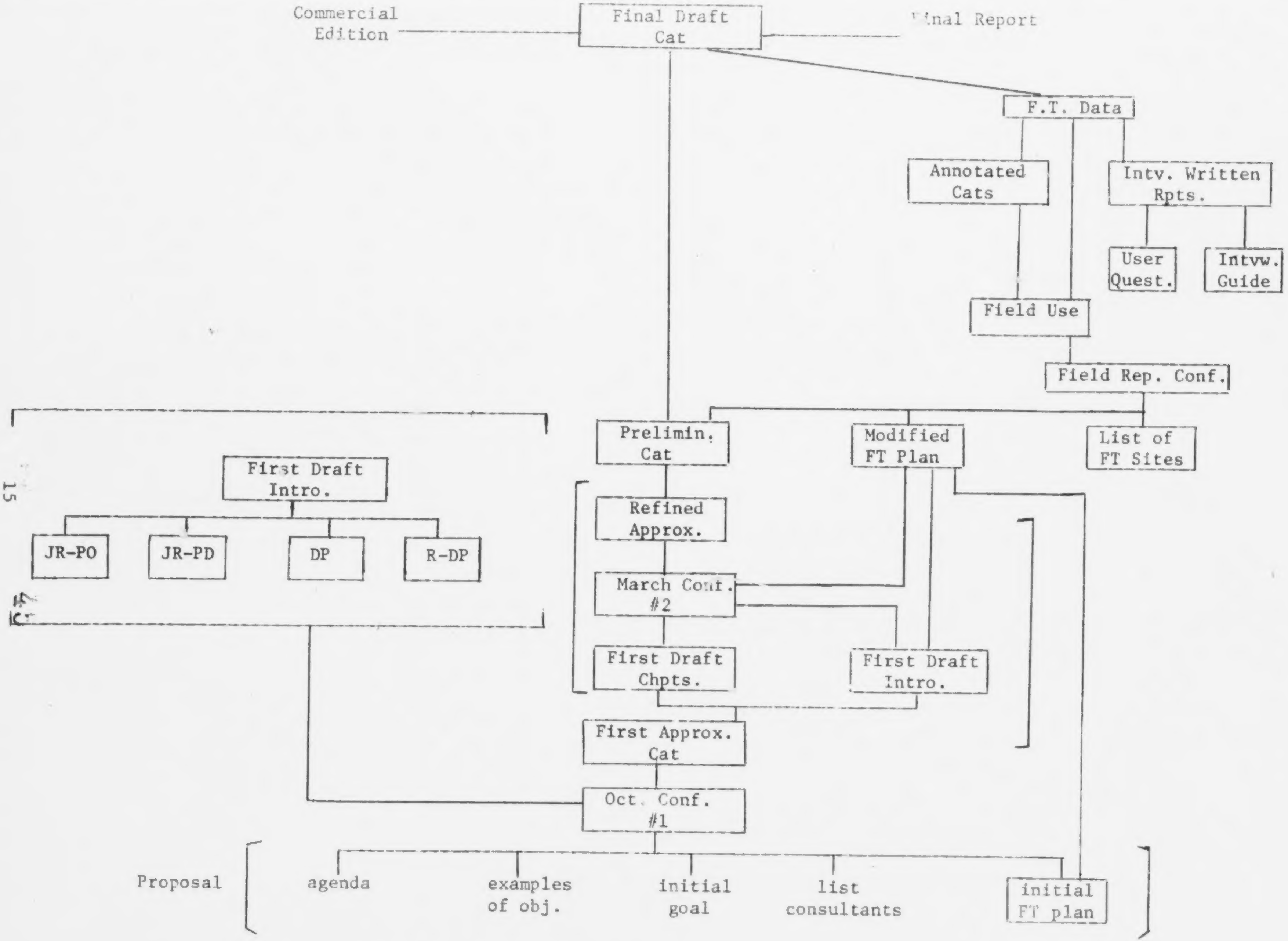

Commercial Edition
Final Draft Cat
Final Report
F.T. Data
Annotated Cats
Intv. Written Rpts.
User Quest.
Intvw. Guide
Field Use
Field Rep. Conf.
Prelimin. Cat
Modified FT Plan
List of FT Sites
First Draft Intro.
JR-PO
JR-PD
DP
R-DP
Refined Approx.
March Conf. #2
First Draft Chpts.
First Draft Intro.
First Approx. Cat
Oct. Conf. #1
Proposal
agenda
examples of obj.
initial goal
list consultants
initial FT plan

FIG. 9. An output map developed prior to the initial site visitation.

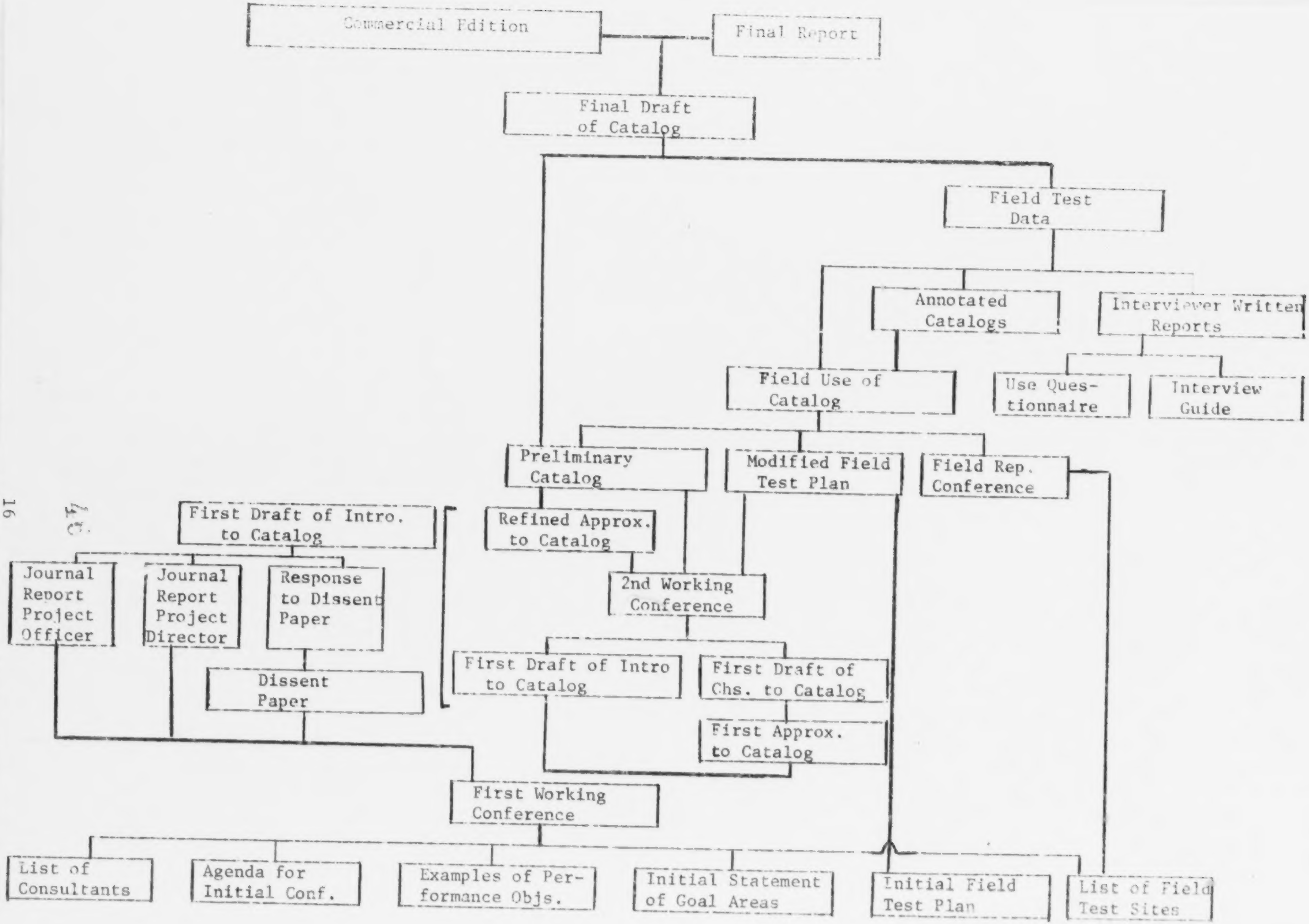

Commercial Edition
Final Report
Final Draft of Catalog
Field Test Data
Annotated Catalogs
Interviewer Written Reports
Field Use of Catalog
Use Questionnaire
Interview Guide
Preliminary Catalog
Modified Field Test Plan
Field Rep. Conference
First Draft of Intro. to Catalog
Refined Approx. to Catalog
Journal Report Project Officer
Journal Report Project Director
Response to Dissent Paper
2nd Working Conference
Dissent Paper
First Draft of Intro to Catalog
First Draft of Chs. to Catalog
First Approx. to Catalog
First Working Conference
List of Consultants
Agenda for Initial Conf.
Examples of Performance Objs.
Initial Statement of Goal Areas
Initial Field Test Plan
List of Field Test Sites

FIG. 10. An output map developed as a result of review during the initial site visit.

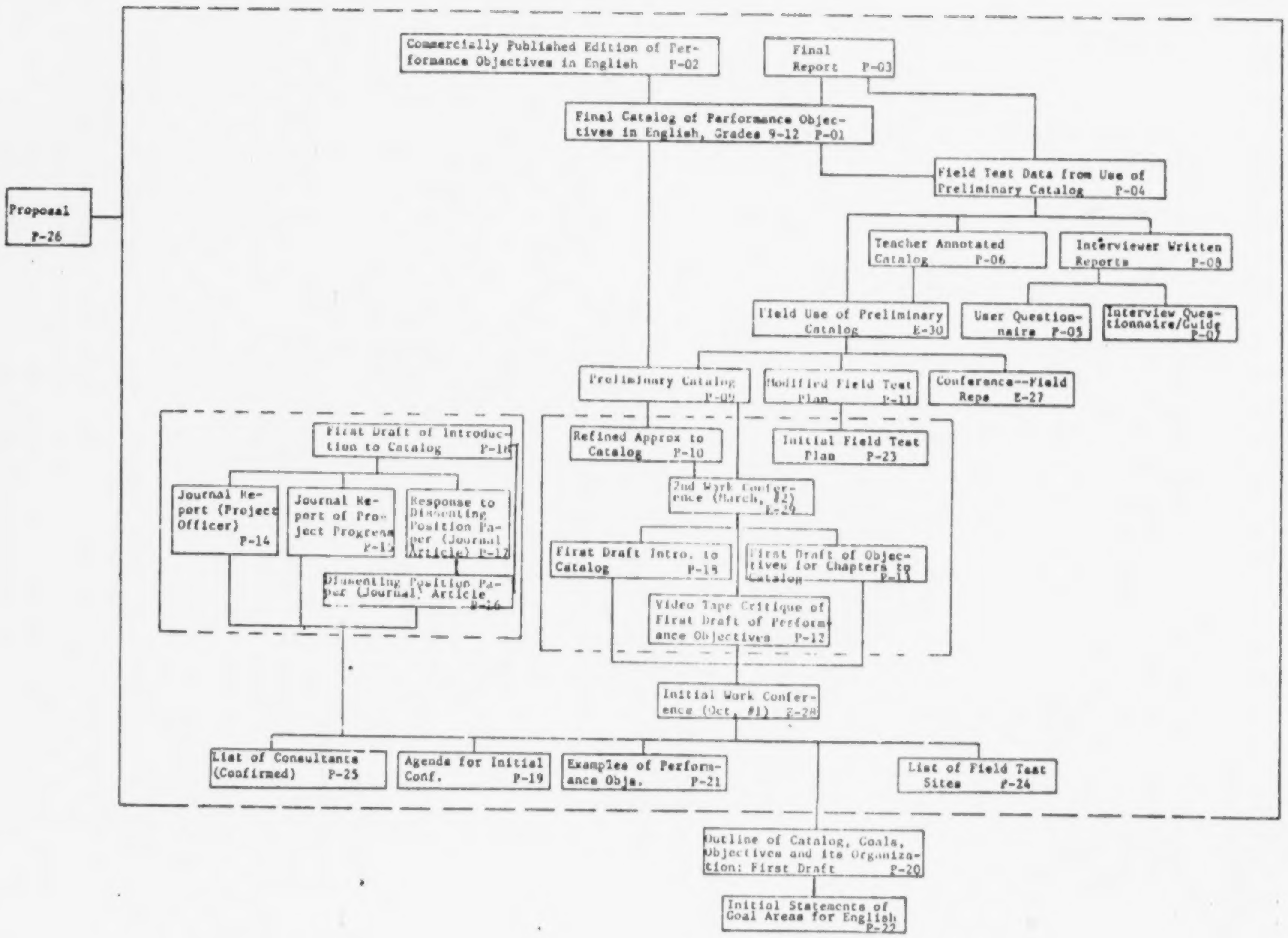

Proposal P-26
Commercially Published Edition of Performance Objectives in English P-02
Final Report P-03
Final Catalog of Performance Objectives in English, Grades 9-12 P-01
Field Test Data from Use of Preliminary Catalog P-04
Teacher Annotated Catalog P-06
Interviewer Written Reports P-08
Field Use of Preliminary Catalog E-30
User Questionnaire P-05
Interview Questionnaire/Guide P-07
Preliminary Catalog P-09
Modified Field Test Plan P-11
Conference--Field Reps E-27
First Draft of Introduction to Catalog P-18
Refined Approx to Catalog P-10
Initial Field Test Plan P-23
Journal Report (Project Officer) P-14
Journal Report of Project Progress P-15
Response to Dissenting Position Paper (Journal Article) P-17
Dissenting Position Paper (Journal Article P-16
2nd Work Conference (March, #2) E-29
First Draft Intro. to Catalog P-18
First Draft of Objectives for Chapters to Catalog P-13
Video Tape Critique of First Draft of Performance Objectives P-12
Initial Work Conference (Oct. #1) E-28
List of Consultants (Confirmed) P-25
Agenda for Initial Conf. P-19
Examples of Performance Objs. P-21
List of Field Test Sites P-24
Outline of Catalog, Goals, Objectives and its Organization: First Draft P-20
Initial Statements of Goal Areas for English P-22

FIG. 11. An output map in its final form as produced through review and refinement during the course of site contact.

map. The initial output map will be refined, modified, and finalized in a series of stages discussed later in this volume.

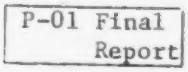
The Elements of a Map

A number of elements can be identified within the illustrations of output maps (Figures 8, 9, 10 and 11): solid line boxes; labels; code symbols; horizontal lines; vertical lines; brackets; dotted lines; dotted line boxes; and vertical (long and short dash) lines. Each of these elements contributes to the total information contained in a map. The following paragraphs identify the information presented by each element.

Solid line boxes

Each solid line box represents a specific output that the project is seeking to achieve. If the box stands alone (is not connected to any other box by a line) one of two conditions exists: (a) the output is considered to have value, but is not related to any other output, or (b) the output index did not contain output identifications that allowed other outputs to be linked to it.

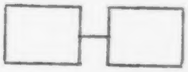
Labels and Coded Symbol



Within each box there is a label which is the descriptor of the output represented. The labels found in the box are the same ones used to describe a particular output throughout the profile.

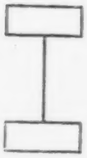
Each box contains, along with the label, a coded symbol. Each symbol is composed of a letter which identifies the structure of the output (P-product, E-event, C-condition), and a 2-digit numeral which identifies the output sequentially with respect to the other outputs in the same profile. These labels and coded symbols can be found in the Output Index.

Horizontal lines



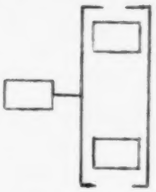
Horizontal lines between boxes indicate that the outputs so connected have side-effect relationships, that is, the production of one influences the other, and vice versa.

Vertical lines



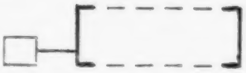
Vertical lines between boxes indicate that the upper output is dependent on the lower. Until the lower output is completed the upper one cannot be completed. In the total map, boxes connected by vertical lines are hierarchically arranged, those at the top of the map being dependent upon all those below.

Brackets



Boxes enclosed by brackets represent outputs which are influenced by, but not dependent on the output represented by the box linked horizontally to the bracket(s).

Dotted lines



Dotted lines connecting two brackets are used to indicate outputs that are influenced by another output when the outputs encompassed by a bracket area are large in number, or when influence is carried across more than one page of the map.

Dotted line boxes

Dotted line boxes represent those outputs which are either generated outside the project, but influence it, or are outputs generated by the project as a function of other outputs but have not been indexed by project staff.

Vertical (long and short dash) lines

When more than one page is needed to display an output map, vertical lines (long and short dash) are used on the right of the first page and the left of the second page to indicate the point at which the two pages coincide.

Under unusual circumstances some outputs may appear more than once in a map. This results when they are related to other outputs in different ways, i.e., dependent on one set but influenced by another. When it is impossible to display both the relationships by one placement, outputs are repeated.

Once the purpose of an output map is understood and the various elements within it are defined, the reader should be able to extract a great deal of information from a careful analysis of a map.

In summary then, an output map is a visual, schematic representation of a series of dependencies among outputs of a particular site. The function of an output map is to visually represent the interdependencies of outputs and not the time sequence required for their production. It is therefore not process oriented and, by similar token, time is an incidental element and not the focus of the map. An output map usually has as its focus one or more contracted-for outputs (and/or outputs which have a degree of significance). This can be understood more clearly if the reader will review the 20 output maps available in Volume IV of the Oregon Studies. It is not often the case that the output map is capable of representing the entire scope of any one project. Instead, it attempts to capture a significant and representative sample of the outputs being produced by each project.

It is critical that the output map be developed at least in an initial stage prior to the initial site-visitation team's briefing of the data collection team. The output map provides an interview orientation that is critical for the data collection team. It enables the data collection team to understand the dependencies of outputs one to another and to understand the function or role of the individual staff members on any particular site, and it provides some clarity as to the outputs the site feels are focal. Given this set of sensitivities, the data collection team is able to focus much more rapidly with an individual interviewee in terms of that individual's contribution to the successful accomplishment of the outputs in question.

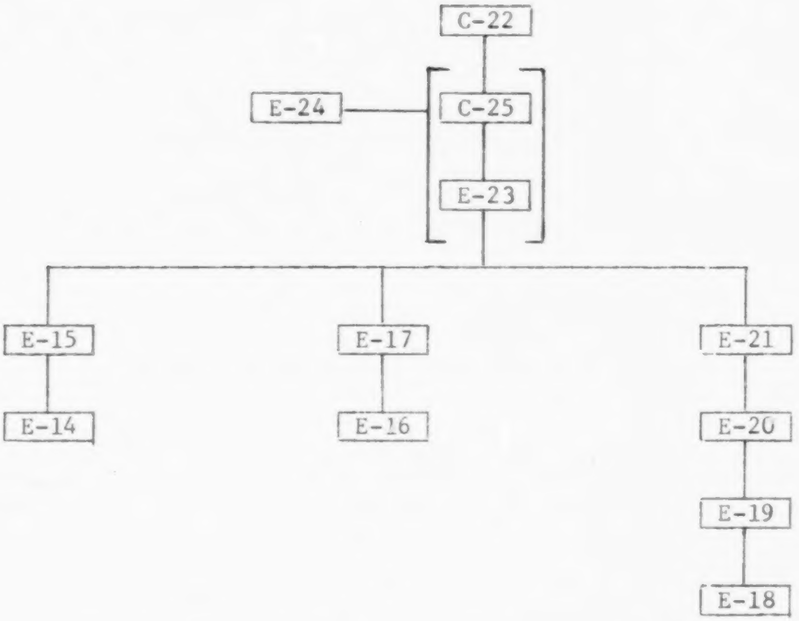
The output map is not only a vehicle for displaying the interdependencies of outputs of any particular site, but is a tool to be used by the data collection team in attempting to learn as much about a particular site as possible in a short period of time. By providing a vehicle for focusing an interview and for coming to grips with an understanding of the site in question, the output map enables the data to be collected in a cost-effective manner.

Activity Block 3: Interviewer Training

Output Index:

E-14	Study of Onsite Data Gathering Operations (facilitating, production)
E-15	Group Discussion of Onsite Data Gathering Operations (facilitating, production)
E-16	Demonstration of Interview (facilitating, production)
E-17	Critique of Demonstration (facilitating, production)
E-18	Practice Interview (facilitating, production)
E-19	Critique of Practice Interview (facilitating, production)
E-20	Practice Recapping (facilitating, production)
E-21	Critique of Practice Recapping (facilitating, production)
C-22	Skilled Interviewers (component, production)
E-23	Team Exercise (facilitating, production)
E-24	Critique of Team Exercise (facilitating, production)
C-25	Ability to Work as a Data Collection Team Member (facilitating, production)

Output Map:



The primary mode of data collection used in this methodology is one-to-one interviewing. (One interviewer to one interviewee). The gathering of data from a site normally requires several interviewers. With one of their number designated as leader, they act as a data collection team. Individually and collectively the interviewer's expertise is essential to the successful implementation of this methodology.

Training an interviewer, therefore, involves both the individual and the team.

The subject matter of interviewer and team operations is set forth in considerable detail in Activity Blocks 2, 5, 6, 7, and 8. Rather than repeat that detail, this section will deal with techniques of getting that subject matter across to the potential interviewers.

The achievement of methodology objectives appears to be best accomplished when there is considerable understanding by all project personnel of the interrelationships and interdependencies of all procedural steps and actions. Only such understanding by all personnel can provide the basis for flexibility in selecting data collection teams to insure that the data gathered will be in a form compatible with subsequent procedural steps.

Interviewer training should be conducted by a person highly knowledgeable about interviewing techniques in general, about the kinds of data sought with this methodology, and about the basic concepts underlying the Oregon Studies.[4] It would be desirable for the Interviewer Trainer to have experienced the application of this methodology. However, studying appropriate volumes of the Oregon Studies and participating in the suggested learning experiences should prove to prepare an individual to be able to fill the role of Interviewer Trainer.

E-14 Study of Onsite Data Gathering Operations, and
E-15 Group Discussion of Onsite Data Gathering Operations

The textbook recommended for interviewer training is this methodology manual. In addition, each trainee should be given a supply of:

Forms[5]

03 - Job/Task Inventory
04 - General Position Activities Questionnaire
05-A - Output Recap
05-B - Output Recap
06 - Interview Recap: Standards
07 - Interview Recap: Tasks
08 - Interview Recap: Enablers

Worksheets

11 - Contextual Cue
13 - Training Suggestions Recap

It is further recommended that each trainee be issued a portable battery powered tape cassette recorder[6] and a supply of tape cassettes.

Activity Block 5 should be thoroughly studied by each trainee. Subsequent group discussion led by an Interviewer Trainer will provide an opportunity for individuals to elaborate their understanding of not only how certain steps are to be performed but also why they are performed. It should be anticipated that several group discussions will be required.

E-16 Demonstration of Interview, and
E-17 Critique of Interview Demonstration

A demonstration of interviewing should be conducted by the Interviewer Trainer. Trainees should be especially observant of the demonstrator's focusing of the interview on selected outputs and his attention to refraining from leading the interviewee's responses. The demonstration should be conducted without interruption for questions and should be tape recorded (as would an actual interview). Follow-up discussion of the demonstration should be accomplished as soon as possible using the recording of the demonstration as the basis for questions, answers, emphasizing, and critiquing. (In the interest of conserving time, the demonstration may be limited to eliciting data around only a single output.)

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[4] See Volume 3, Schalock/Sell paper

[5] Sample forms and worksheets are found in Appendix 1.

[6] It is recommended that a type of recorder be used which gives a visible or audible signal when a side of the tape has been completed.

E-18 Practice Interviews, and
E-19 Critique of Practice Interviews

Following the above demonstration-discussion sequence several practice interviews should be conducted by each trainee. Initial trials should be limited to eliciting data around a single output with subsequent efforts extending around two or more outputs. The most desirable procedure would be for trainees to practice interviews with people within their own agency, but outside of the immediate project staff. To lighten the burden of such demands on outside manpower, an alternative would be to have practice interviews conducted by two trainees, each of whom would handle part of the interview. Least desirable, but still functional, would be to have trainees conduct practice interviews with members of the immediate project staff.

All practice interviews should be tape recorded. Critique of these practice interviews should be conducted by the Interview Trainer on an individual basis, with both trainer and trainee together listening to the tape recording, identifying errors, and discussing problems encountered. If the trainer detects interview problems that consistently occur among his trainees, group sessions can be called to resolve these difficulties.

E-20 Practice Recapping, and
E-21 Critique of Practice Recapping

Onsite data reduction, another responsibility of all team members, is described in detail in Activity Block 7 of this volume. This activity does not lend itself well to demonstration. However, an effective training technique is for the trainee to recap his own practice interviews. This should be done following the interview critique. Again, upon completion of the practice recapping, a critique between the Interview Trainer and the trainee (interviewer/recapper) should begin to establish the needed expertise. If necessary, additional practice interviews, practice recapping, and associated critiques can be scheduled.

C-22 Skilled Interviewers

The events discussed previously should result in the condition of skill on the part of interviewers. This is one of the major anticipated results of this block of activities. The subsequent outputs cannot be effectively accomplished unless interviewers individually possess the skill to obtain the required data in the required form.

C-23 Team Exercise, and
C-24 Critique of Team Exercise

In addition to interviewing and recapping, for which the foregoing training will equip team members, the team leader carries additional responsibilities, and thus needs additional expertise. As primary spokesman for the data collection team, he must effect the initial interface between the team and the site personnel.

It is recommended that the team leader be a senior member of the project staff. He must be capable of explaining the purpose and scope of the team's effort. If he is personally acquainted with the site personnel, he has a distinct advantage. In conducting the initial meeting with the site personnel, his "setting-of-the-stage" for the team's activities can do much to insure their success.

Many duties of a team leader are of an intangible nature and may well be a matter considered in selecting team leaders, rather than a matter of specific project training. Onsite, the team leader acts in the capacity of team coordinator. He must be cognizant of the kind and extent of data that his team will collect, and must take steps to insure that the data are complete before the team departs from the site. He must be aware of those portions of the data that result from combined team efforts and must call and lead meetings of the team to collect those data. He must maintain an awareness of any developing personal or rapport problems, and offset these in a manner advantageous to the data-gathering effort. He provides onsite quality control.

The team's efforts as a team can be exercised through an actual or simulated experience. Preferably, a local project can be used as a practice site. If the practice site data can later be included in the final resulting data compilations, so much the better. In providing such an experience, every effort should be made to provide the entire process from team briefing through site visit and onsite data reduction for each team. It is preferable, if realistic conditions can be maintained, to utilize each team throughout an entire experience. It is less desirable to have other teams observing a team in action than it is to provide such experiences for all teams in training, with post-experience staff discussion sessions. During the team experience and post-experience sessions, it is recommended that the Interviewer Trainer play a decreasingly prominent role, allowing the team to develop the necessary initiative to face and solve problems as they are encountered.

C-25 Ability to Work as a Data Collection Team Member

The ability of a data collection team to coordinate their individual efforts and function as a purposeful entity is essential to the production of useful data. One or more data collection teams are a necessary part of this methodology. The composition of a team does not have to remain constant. If the individuals are competent and compatible, a workable team can be formed specifically for obtaining data from a specific site. The team's size, its leader, and its appearance can be varied to fit the anticipated site situation. Its essential elements are: capable individuals, a capable leader, and a cooperative responsible team approach.

Quality Control

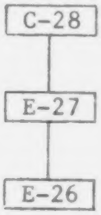
To insure rigid adherence to procedural standards, the training process must be ongoing. The Coding Resolution Team reviews and works with all recapped data during the ongoing project. Their quality checks quickly determine areas where deficiencies exist and point out requirements for further training of active team members.

Activity Block 4: Preparing a Data Collection Team.

Output Index:

E-26	Composing a Data Collection Team (facilitating, management)
E-27	Briefing a Data Collection Team (component, management)
C-28	Data Collection Team Prepared for Site Visit (component production)

Output Map:



E-26 Composing a Data Collection Team

Upon completion of the initial site visit a data collection team must be selected from the investigating agency's staff. One of this team should be a senior staff member who is designated as the team leader. These are the people who will spend time at the project site to interview staff members about their activities. In determining the number of interviewers needed to compose the team, the following should be considered.

1. It is essential that the number of staff members who comprise the target project staff be known. It is also necessary to know the outputs for which each of those staff members is responsible. It is through this combination of outputs and staff members that a determination can be made in terms of the number of interviewers necessary to make the site visit.

2. A general guideline that may be applied in determining the number of interviewers needed includes the following factors:

    (a) In one 2 hour session with an interviewee, three outputs can be successfully interviewed about to the depth of detail required by this methodology;

    (b) Within a 1 day period of time, one interviewer can interview two project staff members;

(c) Approximately 4 to 6 hours of time will be required for the interviewer to recap and summarize the data collected from each interviewee;

(d) Depending upon the vagaries of scheduling on any particular site, it is usually unreasonable to expect any single interviewer to deal with more than four staff members in 1 week;

(e) In any eventuality, no fewer than two staff members should visit any site as a team.

Of course, the size, scope, or nature of some projects may require modification of the ratios indicated above.

3. Any sensitivities or impressions derived from the initial site visit may also be utilized to facilitate the final team selection. This calls for a fairly complete knowledge of the individuals available as team members in terms of not only professional expertise but their personal biases, political viewpoints, in short, anything of a sensitive nature which may prove upsetting or particularly appropriate to the staff of the site to be visited.

4. The general intent in making this team composition is to cluster a group of competent individuals who can enter a particular site, create as little disturbance as possible while on that site in terms of disruption of schedules or the raising of controversial issues, and leave that site essentially in the "condition" in which it was found. It is difficult to elaborate on this point because of the immense variety of personality characteristics that can be involved. Suffice it to say that this point is recognized as a significant consideration in the methodology, and the time spent in attempting to understand individual staff members and the reaction the site may have to them is an investment worthwhile to the data collection process.

E-27 Briefing a Data Collection Team

In order to transmit to the members of the data collection team the information which has been collected by phone and personal visit, a team briefing is conducted. This is preferably done 1 week prior to the scheduled site visitation. During this team briefing, the following events should occur:

1. The sets of data which have been collected by the initial site-visitation team are shared with the data collection team.

2. Members of the data collection team have an opportunity at this time to sensitize themselves to the various aspects and dimensions of the site which they will be visiting. These sensitivities can be obtained not only from a review of the summarized data brought back from the initial site visitation,

but also through a question and answer session with the persons who made the initial site visit.

3. In addition to the above information sharing and sensitization, the determination of outputs to be interviewed around and a preliminary assignment of interview staff to interviewees is also made. Particular attention is given to assigning the interview staff to outputs with which they have some familiarity. Sensitivities brought back by the initial site team as to alignments of interviewee/interviewer personality characteristics may also help to shape these assignments.

4. Since total interview time usually will be limited, a selection of the outputs is probably necessary at this point. Logistic concerns, therefore, provide the first criteria in final output selection. A second criteria is the purpose for which the methodology is being employed. If mapping or describing a domain is the purpose, a broad range of differing outputs may be desired, and selection made to cover as many different outputs as possible. If, however, a detailed study of a particular part of the domain is the purpose, then those outputs bearing on that area would be selected. It should be noted, however, that a detailed study of only a portion of the domain may be invalid if the related context is not understood. For example, if the emphasis is to be on management, it may be necessary to interview (though to a lesser degree) around production efforts to provide the context in which the management occurs.

5. Regardless of the criteria used for selecting outputs to be interviewed around, the data collection team must be made to understand those criteria, so they share common objectives during the visit.

6. In the event that not all of the site's outputs will be the subject of interviews, or if fewer than the total staff of any particular site are to be interviewed, the responsible site person is usually notified prior to the team visit as to the nature of this selected set.

C-28 Data Collection Team Prepared for Site Visit

The data collection team, as a result of this meeting, should be as familiar with the site as time and data will allow prior to any site visit. Data from Forms 01 and 02, as well as the preliminary forms of the contextual map, output index, and output map are discussed with the team. Any sensitivities which have been picked up by the initial site-visitation team are shared.

Prior to the site visit, the Coordinator of Data Inputs will provide the team of interviewers with a package of materials necessary for the collection of data from that site. A package of materials is made up and provided to each individual team member. This package includes:

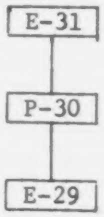
- Up-to-date copy of Form 01 (Project Contact Record).
- Completed copy of Form 02 (Project Questionnaire).
- Sufficient number of Forms 03 (Job/Task Inventory) and 04 (General Position Activities Questionnaire) for use with each interviewee.
- Form 05-A (Output Recap).
- Form 05-B (Output Recap).
- Enough Forms 06 (Standards Recap), 07 (Task Recap), and 08 (Enabler Recap) for the interviewer to recapitulate the verbal information from each of his interviews to a format suitable for coding, storage, and later use.
- A copy of selected documents and materials collected from the project site to date.
- A copy of the initial output map, output index, and contextual map for the project.
- Worksheets 11 (Contextual Cue), 12 (Interview Record Form), 13 (Training Suggestions Recap), and 14 (Interviewer Notes on Interrelationships) for use with each interviewee.
- Worksheet 17 (Checklist of Project Data Inputs).
- A tape recorder, tapes, and batteries.

Activity Block 5: Site Visit by a Data Collection Team

Output Index:

E-29 Team/Site Conference (component, production)
P-30 Selected Outputs for Interviews (component, production)
E-31 Interviews (component, production)

Output Map:



E-29 Team/Site Conference

As a vehicle for introducing the site staff to the interviewers, an initial team/site meeting should be scheduled for the first day the team is onsite. The following items need to be considered during this meeting:

1. It is the Team Leader's responsibility to conduct this session, calling on the team members for comment when appropriate.
2. Outputs selected for interview concentration are reviewed for the site personnel.
3. A second draft, where appropriate, of the output index and output map are shared and verified with the site personnel.
4. If Form 03 and 04 were not initiated on the initial site visit, then their nature and importance are explained. These forms are distributed to the entire site staff. If completed during the conference, interviewers examine them quickly to assure completeness and compliance with directions for responding.
5. One of the most important items to be accomplished during this team/site conference is the arranging of tentative interview schedules for the duration of the time on site. This is usually handled directly by each individual interviewer as a subpart of this session. As mentioned before, the minimum interview time is usually stated as 2 hours, with a possible maximum interview time of 4 hours.
6. As sometimes happens, certain details on Form 03 may not have been readily available before (e.g., data that needed "looking up"). This should be either filled in now, or a definite arrangement should be made to collect the missing data before the team departs.

P-30 Selected Outputs for Interviews

Selecting the outputs to be used as the subject of interviews goes through several stages:

1. The initial site visit provides an output index and an output map. These are tentative in nature.
2. These documents are provided to the data collection team during the team briefing and serve as the subject matter for group discussion leading to the identification of outputs to be subjected to interviewing.
3. The team/site conference provides a significant opportunity to discuss and amplify the output index and map. Addition of outputs at this time will warrant further attention to the selection of outputs for interviewing focus.
4. Normally, a team discussion following the team/site conference will formalize a set of outputs for interviews, and serve to

finalize a strategy for addressing these outputs during the interviewing.

At this stage the output map should be substantially complete, but still open, in the event that new outputs emerge during interviewing.

E-31 Interviews

The interview is the primary data-gathering tool of this methodology. Its manner of employment is critical to the validity of the data to be gathered. The prime purpose of the methodology is to gather data that portrays accurately the processes and competencies needed to produce outputs, as communicated by the individuals who produce them. The descriptions of what must be done and how it is done are elicited from those most directly involved, stated in their own terms with a minimum of prompting or suggestion. The interviewee is considered to be an expert in his own work, and the interviewer's efforts are focused on getting the interviewee to explain his work so that others can understand the standards of acceptability held for an output, the tasks necessary in producing that output, and the enabling knowledges, skills, and sensitivities requisite for generating such an output in the project context.

Definitions:

- Standard - A specific criterion applied to, excellence expected of, or a criterion by which judgments of adequacy are made about an output or the processes which generate it.
- Task - A unit of work performed in producing a specified OUTPUT to a specified STANDARD.
- Enabler - KNOWLEDGES, SKILLS, and SENSITIVITIES needed to produce a particular output.
- Knowledge (as Enabler) - That which is to be known as a requisite to the accomplishment of an output.
- Skill - An ability, proficiency or expertness considered requisite to the accomplishment of an output.
- Sensitivity - A specific perceptiveness and responsiveness considered requisite to the accomplishment of an output.

The following points should be remembered in conducting the on-site interviews:

1. Since the portable battery-powered tape recorder is used, the interview could conceivably be conducted anywhere. However, an office in the normal context of the site is considered the most appropriate setting. The choice of interview setting may be a good opening gambit to get things

started. Since the interviewer is charged with obtaining contextual information, the interviewee's own office as an interview setting may yield clues to his personality or to the conditions under which he normally functions.

2. The interviewer's demeanor and conduct can make or break the success of an interview. He needs to tread a narrow path. Not only should he convey an impression that he is competent (and in that way enhance the image of the team and project), but he should simultaneously convey that the interviewee's expertise provides essential data and will be accurately and understandably gathered.

3. The interviewer should be alert to every word and inflection used by the interviewee, framing his questions to clarify his own understanding of the interviewee's remarks. The interviewer should convey a genuine interest in the interviewee's work, and try to follow the course of the conversation unerringly to the interviewee's meaning. The interviewer should then evidence his understanding of the information elicited through clarifying questions and/or occasional paraphrasing of the data.

4. Regardless of the interviewer's own expertise, biases, or limitations, he should gain the information sought from the interviewee--unclouded by the interviewer's beliefs and opinions. The data being sought throughout this methodology is descriptive in nature. No attempt should be made to evaluate. No judgment should be made or reported. No feeling of approval or disapproval should be conveyed to any interviewee.

5. Assuming that the initial conference between the data collection team and the site personnel has transpired according to plan, the interviewer should have:

   (a) Been introduced to his interviewees.

   (b) Confirmed the outputs and the interviewees who are most knowledgeable about those outputs.

   (c) Confirmed the outputs around which he is to focus his interviews.

   (d) Made appointments for interviews.

   (e) Studied any available vita information on his interviewees.

   (f) Discussed, with team members, any known personality factors concerning his interviewees.

6. Armed with this knowledge, the interviewer should arrive for his interview appointment on time. It should be noted that the data collection team's very presence on the site

is costly to the site in terms of disruption to the daily routine and in terms of manhours of interview time. The team has been allowed to come in to gather data. If any modification to schedules is to be made, let it be instigated by the site. A serious businesslike approach by all team members creates an impression of professional competence and can be initially displayed by meeting interviewees at the agreed-upon place at the appointed time.

A by-product of such conduct is reciprocal behavior in which the interviewee will extend a like courtesy, thus rendering the interviewer's own use of time productive. The importance of such conduct cannot be overemphasized. It is natural that superfluous behavior occurs, especially when interviewer and interviewee share interests in common. However, to use the committed time for such purposes may ultimately preclude gaining audience for an unanticipated follow-up.

7. The words an interviewer uses in greeting and establishing rapport with an interviewee are a result of his own personality and interpersonal skill. At a minimum, the team member should be ready to more fully explain the project objectives and the team's activities if the interviewee indicates a desire for this sort of information. The interviewer plays his role "by ear" being ready with "small talk," the local political situation, the weather, or whatever the situation demands, keeping "one eye on the clock."

8. Transition from the small-talk stage to business can be accomplished behaviorally by setting up the tape recorder, and at a judicious point indicating to the interviewee (again, if mentioned earlier) that the recorder is being used so that his exact words will be captured and his time will not be wasted by longhand note taking.

9. Initially, the interviewer should focus the interviewee's attention on the outputs to be discussed, and confirm that the interviewee is actually knowledgeable about those outputs.

10. It is frequently the case that interviewees are so familiar with their work that some outputs are taken for granted and do not appear as identifiable outputs until they describe the tasks they perform. The alert interviewer can often identify additional outputs through his questions which seek clarification.

    In this situation, it is advisable for the interviewer to make the decision himself as to whether or not to focus the interview on a newly identified output. He must consider in his decision: (a) the value of that output to the study, (b) the available time for interview and/or the advisability of continuing the interview beyond the planned time, and (c) the possibility of arranging a second interview.

Output selection can be finalized only upon completion of the onsite visit, although the list of outputs approaches finality with each interview.

11. In relation to any output around which an interview is focused, the data sought are:

    (a) Standards by which the acceptability of the output is judged.

    (b) Tasks involved in the successful accomplishment of the output.

    (c) Knowledges requisite to the successful accomplishment of the output.

    (d) Skills requisite to the successful accomplishment of the output.

    (e) Sensitivities requisite to the successful accomplishment of the output.

12. These data may be elicited either by asking questions directly, or by more circuitous conversation about the output, mentally noting that the data items have or have not yet been obtained. The degree of directness is a matter of interviewer style, and each extreme has its pitfalls. In using the direct type of approach, the interviewer should be extremely cautious in his use of words to insure that he doesn't lead the responses of the interviewee. For example, in determining standards for a document, the interviewer could properly ask, "If you had this finished document in front of you, how would you know that it was acceptable?" The interviewer could not properly ask, "How would you measure this document's acceptability?" In the latter case, the interviewer led the interviewee by suggesting that some measurement might be used. The question of measurement could be properly used only after the interviewee had indicated, in response to "how would you know it was acceptable?", that some measure or test of the document was actually made. In other words, the interviewer can follow a lead for clarification, but he does not do the leading.

    An interviewer who follows a less direct approach--perhaps by asking the interviewee to generally describe the output--runs the risk of missing important items of data. The approach an interviewer uses (direct or indirect) will become a matter of personal style and probably will be somewhere between the extremes cited above.

13. Style of interview may be influenced by the kind of output that is the subject of the interview at the moment, as well as by the kind of responses evoked from the interviewee--the interviewee's personality, or his way of looking at the world.

Thus the kind of interview resulting in the most effective data gathering will be a combined outcome of interviewer personality, interviewee personality, and the subject of interview (output being addressed).

For example, when interviewing about either a condition or an event, rather than a product, as a form of output, the interviewee may see what he does as a process, rather than something that produces an output or end result. For example, staff morale may be "doing things to keep people happy." The interviewer needs to be sensitive to such viewpoints and should not try to "make them over" in the interviewee's mind.

A helpful way to handle this is for the interviewer to have a clear ordering in his own mind about what constitutes a valid output, in the form of a product, event, or condition, and then the relationship of tasks, standards, and enablers to that outcome, so he can recognize in his own mind when he has obtained answers that establish these relationships.

14. Following through to get the necessary responses can be facilitated by making notes, by keeping a mental checklist, or by filling in gaps at successive interviews, where more than one interview with a specific interviewee is scheduled. In the last mentioned case, the process of recapping and contextual debriefing (Activity Block 7) can serve to detect the gaps that may have been missed in interviewing.

15. Since the data is reduced and reported in the order of standards first, tasks second, and enablers (knowledges, skills, sensitivities) third, the preferred order of questioning follows that pattern. An additional reason for questioning in that order is that by considering standards, the interviewee may be alerted to tasks he performs in achieving the standards of quality as well as the tasks performed in producing the output.

16. The basic interviewing questions around any output are:

    How do you know that the output is acceptable?

    How do you produce the output?

    What do you need to know to produce the output?

    What must you be able to do to produce the output?

    To what must you be sensitive in producing the output?

    Do not anticipate that the data will be forthcoming in neat, orderly fashion. Few interviewees are able to be complete in their responses in any one of the above categories. For example, suppose that standards for the output "interview data" have already been elicited, and tasks are now being sought. The interviewee might mention that he performs a reliability check to determine that all his interviewers were obtaining answers to the same questions (a task). However, no standard of reliability had been mentioned. The alert interviewer should then inquire as to what degree of reliability is desired; and hence, is that degree of reliability actually a standard for the acceptability of the "interview data"? In a case such as that just used as an example, a typical interviewee response is, "Oh yes, of course. I forgot to mention that one when I was telling you about standards."

The above phenomenon occurs frequently throughout the interview. In eliciting skills, the interviewee frequently comes up with additional tasks. Questioning for sensitivities frequently results in additional standards--particularly of the "I just feel that it is done right" kind of standard.

It takes extreme concentration on the part of the interviewer to detect cues which allow him to follow and probe for the data he seeks.

17. The most difficult aspect of interviewing in this methodology is the interviewer's knowing how far to probe or just when he has achieved the degree of detail that can be adequately handled (or is desired). A number of small indicators combine to provide the interviewer a "feel" or "sense" in this respect. In determining standards, for example, the interviewer's knowledge of similar outputs may give him a clue as to what the interviewee might possibly say. By considering such a hypothetical standard in advance of the interview, the interviewer may be able to form an idea of the degree of detail he wishes to attain. A few opening questions to elicit the interviewee's description of the output in question may provide insight into his normal way of speaking, and hence indicate to the interviewer how much probing will have to be done.

Basically, the interviewee's statements of standards and enablers are accepted as stated; however, probing to understand the interviewee's exact meaning should provide the detail required. The same problem of degree of detail is even more challenging when eliciting tasks. The definition provides little help (a unit of work...), in that no scope of "unit" is provided. Taking the definition as it reads, the interviewer can only understand that the size or complexity of a task can vary. Here again, a feel or sense must be developed. Tasks should be meaningful units of work; not so finite as to constitute a single homogeneous action of the worker (e.g., pick up pencil), but rather a composite statement describing a unit of work that is meaningful in the eyes of the interviewee (e.g., "Write outline of Chapter Six"). Verbs such as supervise, insure, oversee, manage, etc., however, are so gross in scope that many meaningful units of work might remain hidden within. Probably the best guide is to probe until either the interviewer believes that he fully understands the action represented by the task or he has detected that the interviewee is having difficulty in being more specific.

The following example illustrates the use of probes to arrive at an acceptable level of detail. (This is an edited transcript of an actual interview about the output "Atmosphere for Constructive Criticism.")

Interviewer: How do you go about creating an atmosphere of constructive criticism?

Interviewee: We have to start, of course, with well qualified people. Then through direct interaction we establish the atmosphere of constructive criticism.

Interviewer: Do you mean that you personally critique the work of your subordinates?

Interviewee: That, certainly, but much more than that. I do interact with an individual to critique his documents. However, it is a mutual kind of thing--I ask him to critique my work too. In this way we work together to achieve better products.

In this example, the first interviewee response lacked sufficient detail. The second response shows two tasks (in boxes) that are at an appropriate level. Probing questions could be asked which would lead to more definitive statements, e.g., "Call staff member to my office"--"tell him his sequence needs improvement"--etc. However, these statements are more detailed than necessary.

18. Standards, tasks, and enablers are determined in relation to each of the assigned outputs. During the interview, notes can be made, if the interviewer needs such "memory joggers," on blank paper or on a contextual cue sheet (Worksheet 11). However, such notetaking should be minimized, as the essential data is recorded on tape.

19. When the data relevant to a specific output has been gathered, the interviewee's suggestions or ideas are requested as to how best to train people to do the kind of work he has described. Cues for starting this line of questioning may have been noted from the interviewee's previous responses about knowledges, skills, and sensitivities. His recommendations may stem from his own background and the problems he encountered in becoming qualified to produce or assist in producing the outputs he is knowledgeable about, or they may stem from his experience in trying to locate adequately qualified staff. In some cases, his training recommendations may have been tried out in an attempt to increase the capability of professionals already on the payroll. As in all facets of the interview, the *interviewee's* thoughts and ideas are the data sought--not the thoughts and ideas of the interviewer. Therefore, extreme caution must be exercised to refrain from prompting or suggesting answers to the interviewee.

20. It is very possible that an interview may require in excess of 2 hours. The questioning has been detailed and has required considerable attention and serious thought. The interviewer should be alert for signs of fatigue on the part of the interviewee and if advisable, schedule a second interview later.

With the gathering of the training suggestions, the data sought are complete. In terminating the interview, however, it is advisable to "keep the door open" for a brief return interview if any gaps in the data are seen during the initial data reduction (recapping the tape recordings of the interview). No interview should be terminated without expressing appreciation for the time, thought, and effort given by the interviewee. The usual experience has been that both parties express a sense of having found the interchange beneficial. Invariably interviewees have found that responding has sharpened their own perception concerning their own work.

Immediately after departure from the interviewee's presence, the interviewer should note any items of contextual importance. A copy of Worksheet 11 can be used for this purpose. These notes, made while the impressions are fresh in mind, are helpful during daily team debriefings and during a final team debriefing. (See Activity Block 7 for contextual debriefing.)

The following is a procedural outline for interviewing that is recommended for this methodology.

1. Arrive for interview at appointed time.

2. Greet interviewee.

3. Turn on tape recorder.

4. Confirm interviewee's relationship to selected outputs.

5. About each output:

   (a) Question interviewee about standards of output acceptability.
   (b) Question interviewee about tasks.
   (c) Question interviewee about knowledges.
   (d) Question interviewee about skills.
   (e) Question interviewee about sensitivities.
   (f) Question interviewee about his recommendations for training.

6. Terminate interview by thanking interviewee for his cooperation.

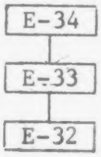
The data obtained by interview, at this point in time, is in the form of a tape recorded conversation. It contains much of the desired information. In this form it does not lend itself to easy processing and analysis. Subsequent processing of the data will extract the essence of the conversation and reduce it to more appropriate form for analysis. However, in this highly unrefined form (tape recordings of conversation), the data represent one of the major outputs of an employment of the methodology.

Activity Block 6: Questionnaire Administration

Output Index:

E-32 Delivering the Questionnaires to Respondents (facilitating, management)
E-33 Explaining the Questionnaires to Respondents (component, production)
E-34 Collecting the Questionnaires from Respondents (component, production)

Output Map:



E-32 Delivering the Questionnaires to Respondents

It is critical that Forms 03 and 04 be completed by all site personnel (not only interviewees) by the time the data collection team departs from the site.

Responsibility for the delivery of Forms 03 and 04 resides with the leader of the initial site visit and/or the data collection team. A feasible time for distribution of these forms is the team/site conference. If the total site staff has been assembled, rationale and instructions for completing these two questionnaires can be presented economically. In practice, it has been found to be necessary, at times, to request that an interviewee complete the forms as the initial step of an interview. In such case the interviewer must assume some responsibility for questionnaire administration. This modification of normal procedure is to be avoided if at all possible in order to control the conditions under which respondents are asked to provide information.

E-33 Explaining the Questionnaires to Respondents

Forms 03 and 04 each include appropriate sets of instructions. It is the team leader's responsibility to review these instructions in detail with site personnel and to answer any questions which might arise as a result of that review. (By team leader, in this case, is meant the leader of the initial site visit and/or the data collection team.) In providing a review of the instructions emphasis must be given to the necessity for responding to every item contained in the questionnaire and to the fact that responses will be kept confidential.

As a final step in explaining the questionnaire, the team leader must work out with site personnel the procedures to be followed in cases of serious doubt about any item which may cause the respondent to be unable to respond to it. Generally this will consist of arriving at an understanding that all questionnaires will be reviewed by the data collection team and, where omissions or questions are noted, that the involved respondents will be contacted further. Procedures for return of the questionnaires to site visitation personnel must be worked out at this time. By doing this, respondents can be assured that confidentiality of the responses will not be violated by other site personnel informally "reviewing" the responses.

E-34 Collecting the Questionnaires from Respondents

Assuming optimal operation of the methodology, the leader of the initial site visit has established cooperation with the responsible head of the site for return of all questionnaires. To assure maintaining the confidentiality of respondent data, questionnaires must be returned directly to the team leader or a member of the data collection team. Procedurally, the questionnaires are returned in person at the time of an interview. At that time the data collection team member receiving the questionnaire must confer with the respondent to complete Item 47 of Questionnaire Form 03. Using Category Set X (Project Role; see Appendix X) as the frame of reference, agreement must be reached as to which of the roles listed in Category Set X best describes the respondent's role in the project. The code number for that role is recorded by the data collection team member in the box provided for Item 47 in the questionnaire.

At this time also, the adequacy of the completion of the questionnaires must be examined. In the presence of the respondent, the team member collecting the questionnaire looks quickly at each item to assure that they have been responded to. Any notations on the forms, or any questions raised by the respondent, are clarified and any necessary changes in the responses are made at this time. The team member makes special note of any problems encountered by respondent so that subsequent explanations or revisions of the questionnaires can reduce the sources of such ambiguities. He then closes out the questionnaire phase of his data collection effort.

Activity Block 7: Onsite Data Reduction

Output Index:

E-35 Recapping (component, production)
E-36 Finalizing the Output Map (component, production)
E-37 Contextual Debriefing (component, production)

Output Map:

E-35 E-36 E-37

The first data reduction activities are performed by the interview team while still onsite. These activities include recapitulating interview data (recapping), finalizing the output map, and contextual debriefing. The data collection team is the primary source of first-hand knowledge about the site. During the team's visit they interview, discuss, and observe, noting (physically or mentally) many impressions relating to the overall context and working conditions surrounding the project/site, and they particularly form impressions of the meanings of statements made by interviewees. These latter impressions tend to be lost if not used quickly in recapping the recorded interview data. The recorded tapes preserve only the "audio." The scene is preserved in the interviewer's memory. For this reason, if recapping were done by someone other than the interviewer, the benefit of the interviewer's affect in the site context would be lost.

Further, reviewing the data (by recapping) enables the interviewer to detect omissions in the information gained from an interviewee. If the recapping does reveal such a gap, either a second interview or a few questions could be directed to the interviewee to complete the data while the team is still onsite. If such gaps are not detected until the team has departed from the site, the cost of filling them is high, whether by telephone calls or a return visit. Especially costly is the loss of the frame of reference and rapport which was established during the team visit. For these reasons, it is most desirable for the recapping to be accomplished by the interviewer as quickly after the interview as possible, and in any event, prior to the team's departure from the site.

E-35 Recapping

The term "recapping" as used here, indicates the first step in data reduction. Basically, it is the identification and recording of data in written form. The term is used in relation to:

1. Output identification (Form 05-A);

2. Transfer of output identification numbers to output data sheets (Form 05-B), coupled with some limited coding;

3. Transfer (and/or translation) of tape recorded interview data into statements of standards (Form 06), tasks (Form (07), and enablers (knowledges, skills, and sensitivities--Form 08); and

4. Transfer (and translation) of tape recorder recommendations for training into summarized statements (Worksheet 13).

Recapping consumes a major portion of the data collection team's onsite time. Although considerable variation will be noted for individual interviewers, the average recapping time is approximately 2.5 times that spent in interviewing. Thus, if an interviewer conducted two interviews per day, each of approximately 2 hours duration, the approximate time spent in recapping will be 10 hours, for a total time of 14 hours spent in interviewing and recapping.

Recapping centers around listening to tape recordings. In order to reduce interruptions, preserve the confidentiality of the data, and eliminate interference with others, it is strongly recommended that the recapping occur in privacy. A supply of blank Forms 05-A, 05-B, 06, 07, 08, and Worksheet 13 are required.

In recapping the interview from audio tape to a written form, the following procedures should be followed:

1. The first step in recapping is output identification. Each output which served as a point or focus of the interview must be identified by a title and number. If the Form 05-A has been completed and finalized, the output is located on the Form 05-A and its identity number obtained therefrom. However, if the Form 05-A has not at this time been finalized, the output title should be written on a blank Form 05-A. In this case, coordination must be effected through the team leader to insure that a single identity number is matched with an output title and is not used by different interviewers to identify different outputs.

   The identifying output title should be worded in a descriptive fashion and agreed upon between interviewer and interviewee. The agreed upon wording for the first output interrogated around will be found in the early part of the first tape recording of the interview. The project identity number (a three-digit number assigned prior to the site visit), the output identity number, and the output title must be confirmed on Form 05-A. The project identity number and output identity number are then entered in the appropriate spaces on a blank Form 05-B.

2. The two identification numbers (project and output) are then entered in the appropriate space on one blank copy each of Forms 06, 07, 08, and Worksheet 13. (Forms 06, 07, and 08 may be printed on colored paper for ease of handling; e.g., 06-red, 07-green, and 08-yellow.)

3. Each interviewer is identified by a two-digit number. Enter the interviewer number on each of the Forms 06, 07, and 08, and on Worksheet 13.

4. Upon determination by the team and team leader of the outputs to be interrogated around and the site personnel to be interviewed, a two-digit identity number is assigned to each interviewee. This interviewee number is entered in appropriate space on Form 05-B. (Use the left hand position in this column. Additional spaces are provided for later use since it is possible that more than one interviewee may be questioned in relation to any one output.) Enter this same interviewee number in the appropriate space on Forms 06, 07, 08, and Worksheet 13.

5. As an advisable (but not essential) identification step, Forms 06, 07, and 08 can be headed by the output title in any available blank area at the top of the forms. This wording

can prove to be a useful crosscheck of output identification, and a reminder of the output (on each sheet) for the coding resolution team. The result of this identification step is to insure that all forms pertinent to one output contain matching identity information and can at any time be retrieved from separate files and considered as an entity. The remaining spaces on the Forms 05-B, 06, 07, and 08 are left blank at this time.

6. The tape recording of the interview is now closely listened to, to detect the various statements of "standards," "tasks," and "enablers" as made by the interviewee. (Since interviews, though centered on a single output, do not always proceed in a well ordered manner, it is necessary to have all three forms readily at hand.) The recapper must, in effect, relive the interview and regain the understanding of the interviewee's words that he had during the interview. Frequently, in response to questioning in relation to standards, an interviewee may qualify the standard by mentioning enablers. For example, the interviewee could say, "Because I have been a newspaper reporter, I have a feeling for what will be acceptable to or will antagonize a reader. Therefore, I read the drafts of reports so that I feel certain that we will not create a poor impression." This statement indicates a standard that the interviewee personally applies to the generation of the output. However, in addition to the standard, he hints at a skill in newspaper-style writing and a sensitivity to reader reaction. Although the statement was elicited as a standard, the skill and sensitivity can and should also be identified and recorded.

   In the example given, the standard was worded negatively (e.g., "I feel certain that we will not create a poor impression."). The term "standard," as used in this methodology, is of the degree of acceptability or of excellence. Also, the wording of the standard statement to be written on Form 06 should be as nearly in the interviewee's own words as possible. The recapper, in attempting to meet these criteria, could record on first line of Form 06 "I feel certain that we will create a good impression."

7. Since, in the above example, the interviewee indicated that he applies this standard himself, the numeral 1 would be entered in column K beside the written standard. If, instead, the standard is applied by one or more persons other than the interviewee, the numeral 2 is used in column K. And, if the standard is applied by the interviewee working in conjunction with one or more others as a team, the numeral 3 is used.

8. If, as in the example cited, a task or enabler is detected or alluded to, a tentative note can be made on the appropriate form so that the noted item can be confirmed as being present when that particular portion of the data is being considered.

9. If additional pages are required for recapping standards, accurate identity information must be placed on the additional

sheets. If no standards were elicited in relation to an output, the Form 06 must indicate this by entering "no information collected under this heading." However, such a no-response sheet should be retained. While recapping, all pages should be kept carefully in order for later page numbering.

10. When all standards related to a particular output have been recorded (or believed to be written), Form 07 may be used to record tasks done in relation to that same output.

In content, a "task" is generally said to describe a worker activity. It is a unit of activity that deals with the methods and procedures and techniques by which outputs are produced. Tasks are discrete units of work performed by an individual or individuals where each usually has a definite beginning and ending within a limited period of time. They are not so finite as to constitute a single homogeneous action of the worker, but are composite statements describing meaningful units of work performed.

The task statement is composed of three basic elements:

(a) a specific verb describing an action;
(b) a brief identification of what is acted upon; and
(c) whatever qualifying phrases are needed to clearly distinguish that task from related or similar activities, or to limit and define the scope of concern.

For example:

"Counsel	+	staff personnel	+	on career advancement"
(action)		(item acted upon)		(qualifier)
"Compute	+	product moment correlations	+	on a desk calculator"
(action)		(item acted upon)		(qualifier)

Task actions basically are of four gross types:

(a) Information gathering activities. These are tasks performed primarily to obtain information about a job situation or the degree to which progress is made in the attainment of the job goals and standards. Typical verbs are: observe, review, receive, monitor, obtain, listen, etc.

(b) Determinations. These are tasks performed in which judgments are made about the existence, adequacy, or nature of deficiencies of a job situation. Typical verbs are: decide, determine, judge, estimate, etc.

(c) Controlling activities. These are tasks performed to correct, maintain, operate, or report directly on a job situation. They directly seek to change a state of affairs to provide progress toward the attainment of job goals and standards. Typical verbs are: instruct, assign, inform, counsel, submit, phone, compute, recommend, plan, etc.

(d) *Generating activities*. These are tasks performed that result in producing original components or elements of outputs. Typical verbs are: write, prepare, generate, create, make, build, draw, etc.

Task statements should not contain action words that are not sufficiently specific. The use of such words results in task statements that do not meet the requirements for finite and meaningful work units. Typical of such verbs are: supervise, insure, oversee, manage, etc. Such words should be used as cues to identify a need for more interview probing.

Items acted upon basically are of three gross types:

(a) Things (equipment, materials, measuring instruments, etc.)
(b) Data (concepts, analysis, reports, tabulations, etc.)
(c) People (peers, supervisors, advisor, subjects, self, etc.)

Qualifiers may apply to either the action or the item acted upon.

Examples of qualifiers applying to the action are:

"Conduct weekly meetings *with division directors*."
"Compile reading program data *into meaningful format*."
"Assist district personnel *in establishing and phrasing objectives*."
"Interact with district personnel *in such a way as to give the district research associate credibility*."

Examples of qualifiers applying to the item acted upon are:

"Identify relationships *between the objectives of various projects*."
"Develop an *evaluation* proposal."
"Project requirements *for the collection of preliminary data*."
"Prepare a statement *of project definition*."

11. Frequently interviewees will provide task statements that describe work performed by others than themselves. This characteristic is indicated on Form 07 in the P column for each task. The numeral 1 is used to indicate that the task was performed by the interviewee, "2" is used to show tasks performed by other person(s), and "3" identifies those tasks performed by the interviewee working with one or more other people as a team. Columns N, O, Q, and R are left blank during recapping.

12. If (as is frequently the case) more than one sheet (Form 07) is required, the identity information must be entered at the

top of the additional sheets. As with the handling of the standards sheets, their order should be carefully maintained pending page numbering.

13. Enablers are considered to be one of three types: knowledges, skills, or sensitivities. Enablers may either be prerequisite to working on the subject output, or be acquired while doing the work. However, they are statements of knowledges, skills, and/or sensitivities that are considered by the interviewee as essential to the successful accomplishment of the output. Knowledges may either be stated as "Knowledge of _ _ _ _," or be written exactly as stated by the interviewee. However, a statement of a knowledge should be identified by placing the numeral 1 in the S column on Form 08 preceding the statement.

14. Skill statements may either be stated as "Skill in _ _ _ _" or "Ability to _ _ _ _," or be stated exactly in the interviewee's own words. However worded, skill statements are preceded by the numeral 2 in the S column.

15. Sensitivity statements may either be stated as "Sensitivity to _ _ _ _," or be written in the interviewee's own words. This category includes statements of requisite personality characteristics. Each sensitivity statement is preceded by the numeral 3 in the S column of Form 08. There is no necessity for grouping all knowledges, skills, and sensitivities together as sets. The numeral in the S column will allow for later computer sorting.

16. Each enabler should be identified as being a requisite of: the individual being interviewed (#1); other person(s) (#2); or a team requisite (#3). This numeral is placed in column T on Form 08 preceding each enabler statement. Columns U and V are left blank during recapping.

17. Additional sheets of Form 08 may be used as necessary making sure these additional pages are properly identified. As with previous forms, the order of pages must be rigidly maintained pending page numbering at the completion of recapping.

18. After extracting the tape recorded information related to one output, determination of its structure must be made (or confirmed). It is considered to be either a "product," "event," or a "condition" (see definitions in the Glossary). This decision is indicated in the box marked A on Forms 05-B, 06, 07, and 08. The numeral "1" placed in the A box indicates a product, "2" indicates an event, and "3" signifies a condition.

19. The decision as to whether an output is either a product, an event, or a condition may have been made prior to the interview. However, the data gathered describes the output in great detail and may tend to confirm or refute a previously determined class. If a change is indicated, this information should be brought to

the attention of all team personnel to insure that the change is reflected in all documentation (e.g., output map, profile, etc.). If no decision can be reached at this time, the A code may be left blank during recapping but noted for referral to the coding resolution team.

20. The relationship of an output to other project outputs is determined by the interview team in finalizing the output map (see the section in this chapter on finalizing the output map). One aspect of this relationship is the "level" the output holds in the overall project. The output is considered to be either:

Focal - a classification given an output having contractual relationship to the outcomes of the efforts of a project (identified by the numeral 1),

Component - a classification given an output having an integral ingredient relationship to and which is not an instance of a focal output (identified by the numeral 2), or

Facilitating - a classification given an output having an assisting relationship to and which is not an instance of a component or focal output (identified by the numeral 3).[7]

The numeral indicating the level of the output is placed in the box marked B on Forms 05-B, 06, 07, and 08.

21. One other item of information in relation to an output must be recorded: its completion status. Using the six-possibility code (see Appendix B2, set W), enter the appropriate number in column W on the Form 05-B. This completion number appears on no other form.

22. To this point, the recapping has dealt with a single output. That output has been identified by number, has been related to an interviewee and interviewer, has been matched with standards, tasks, knowledges, skills, and sensitivities, and has been coded to show its structure, level, and stage of completion. This entire set of recapping activities must next be done for the second and third outputs until all output data from an interview have been extracted from the tapes and recorded on the proper forms.

23. When this activity is completed, Forms 06, 07, and 08 are then numbered using the upper right hand corner (page __ of __ pages).

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[7] It is especially critical that the reader refer to Appendix 5 for a discussion of the decision rules pertaining to these classifications.

Number all of these forms sequentially and insure that they are in proper order (06, 07, 08 for first output; 06, 07, 08 for second output; etc.). This set of forms represents the output specific data gained from one interviewee and should be packaged (folder or envelope) and labeled for subsequent delivery to the Coordinator of Data Inputs (see #17 within the section of this chapter on coordination of data input and storage).

24. One more category of information must be extracted from the tapes. This information deals with the interviewee's suggestions for training people to do the kind of work he has described in producing his outputs. His suggestions should be summarized and written in narrative form in the left hand column of Worksheet 13. The right hand column is used to note the output, task, or enabler to which the training suggestion relates. Where training has been instituted as an integral part of the project, some comments may indicate training ideas found to be effective. Additional pages of Worksheet 13 may be used if required--but if used, additional pages must be properly identified. These pages are considered a separate document, paginated as a separate package, and placed with the Forms 06, 07, and 08 for delivery, with all tapes, to the Coordinator of Data Inputs.

25. Forms 05-A and 05-B are composite forms for the entire site/project, and will be completed while recapping later interviews. Upon completion of the interview team's site visit, one complete and final 05-A and 05-B representing all outputs detected for that project will be delivered to the Coordinator of Data Inputs.

E-36 Finalizing the Output Map

Development of an operative output map is one of the essential elements of this methodology. To replicate the generation of outputs of the type for which a project is responsible, an important factor is understanding the dependency of the various component and facilitating elements with which the focal or contractual outputs are built. The map presents this understanding through a visual, schematic representation of output dependencies, rather than a time-sequenced process with unstated relevance.

Map finalization is a task of the interviewing team, with the team leader being responsible. Since all inputs necessary for its production must be available before the team can finalize this visual representation, it is important that the team leader secure the necessary input before the team leaves the site. Finalization of the map will reflect these inputs from the site in terms of the dependencies discovered from interviewing around the various outputs. Initial versions of the map will also help in ordering the final visualization of output dependencies.

The following procedures should be observed in finalizing the output map:

1. Upon completion of Form 05-A, the identity numbers of outputs are transferred to Form 05-B and certain codings are entered for each output. These entries specify the structure of output (product, event, or condition), and the output level (focal, component, or facilitating).

2. With the team leader moderating (preferably with a large wall chart), the team discusses and confirms that those outputs listed as "focal" on Form 05-B actually are the contracted-for project outputs. When consensus is reached, the focal outputs (or their identity numbers) are placed horizontally on the wall chart at the top of the page.

3. Next, each component and/or facilitating output is considered in the project's context and related to one of the focal outputs by connecting lines. Each is marked on the chart using dependency relationship as the only factor. Time relationship is not considered.

4. Many facilitating outputs make possible the accomplishment of more than one output. This multiple relationship is either shown by the use of brackets (see Figure 3), or reentered in another location, if that will more clearly convey the relationship. In some cases, certain outputs facilitate all other project outputs (e.g., staff welfare). Here too, brackets are used to indicate this multiple dependency.

5. With every output detected, consensus is reached within the team as to its dependency relationships. Of course, the understanding of an interviewer about the outputs upon which he focused interviews is of primary concern. All pooled knowledge of the team about the outputs identified and the project's context are brought to bear on the finalization of the output map.

6. From this wall chart, then, a tentative, final version of the output map is drawn. Upon the team's return home, it is approved by the Coordinator of Data Collection (or redone until it is approved), and delivered to the Coordinator of Data Inputs by the team leader.

E-37 Contextual Debriefing

This is an activity during the site visit that serves several purposes. During interviewing, an interviewer may make contextual notes. This can either be about something that is contextual to the whole activity of the project, or it can be about something contextual merely to the output being interviewed around, in which case it may provide subject for further discussion among the team, and/or for questioning of interviewees.

Such contextual notetaking can serve as a trigger for complete contextual observations after the day's interviewing is completed. The interviewer may use his tape recorder to make a permanent, verbal record of his observations at greater length than is feasible in the writing of notes. Such contextual debriefing serves as a personal, individual facilitator or memory aid of the context in which the project operates.

Another form of contextual debriefing is one in which the entire team engages, sometime after the end of a day's interviewing activities. This debriefing time provides an opportunity to share comments regarding the site. Its purpose will be sharpened by the conscious effort to modify or finalize the output map. Directions for the conduct of such a debriefing session cannot be given because (a) every project visit will have its own variation as to what is needed, and (b) time is of the essence, as explained earlier. It is helpful for the profile writer if this session is tape recorded. A sensitive team leader can economize playback time for the writer's later review of the tape by recording only when something is being said that he discerns as critical to "remember."

Prior to the debriefing session, it may be well to establish priorities for what it should accomplish, e.g., to clarify a part of the output map, to address some specific problems, or to discuss unexpected features uncovered during the day's interviewing, etc. This can sometimes be done informally over dinner. It is difficult to make hard schedules, because every project is likely to have its own scheduling problems, both for individual interviewers and for the team as a whole. An alert team leader with a cooperative team can manage to insure that each team member's time is optimized during the site visit.

While part of the debriefing purpose is to provide a basis for revising strategy as may prove advisable during the visit, a second part is to get on record some of the contextual observations perceived by all of the team that otherwise might get overlooked due to simple "information overload" from seeing and listening to so much during the time onsite.

In addition to daily team discussions of contextual information, a final team debriefing should be performed and recorded either while the team is onsite or during the return trip. Performed after all interviewing is complete, this final discussion of contextual information provides a summary of the team's impressions of the site. Sharpened by numerous interviews, personal contacts and frequent observations over a period of time, the data collection team's knowledge at this time should be at its peak. The resulting tape recording should be a most useful tool to the profile writer.

The final contextual debriefing may be either formal or informal as the team leader desires. However, each team member should be given an opportunity to present his views for the team's concurrence or disagreement.

Activity Block 8: Closing Out a Site Visit

Output Index:

E-38 Completeness Check (component, management)
E-39 Final Meeting (facilitating, management)

Output Map:

E-38 E-39

E-38 Completeness Check

1. Worksheets 17 and 18 may be used to insure completeness of data gathered.

2. Check that all Forms 02, 03, and 04 (questionnaires) have been received.

3. Check that all Forms 02, 03, and 04 have been properly completed.

4. Check that all recapping has been completed.

5. Check that output map is complete in final draft form.

6. Check that all documentation (supplied by site) has been received and packaged.

7. Check that return transportation arrangements are completed.

E-39 Final Meeting

The team leader should meet with the site director prior to the team's departure. In some cases the director may wish to have a final meeting with the entire interview team. Regardless of the form the meeting takes, the following items should be covered:

(a) Assurance of confidentiality in data compilations.
(b) Assurance that a copy of the site profile will be sent for the director's approval prior to printing.
(c) Assurance that the final results of the investigation will be made available.
(d) Sincere thanks for the site's cooperation.

Frequently, team leaders carry their responsibilities beyond the site visit itself by sending follow-up letters. Many lasting friendships and mutually beneficial professional relationships have resulted from the team/site interaction.

The team leader alone does not carry the responsibility for team/site affect. The professional and ethical conduct of every team member is instrumental in leaving the site with a positive affect.

Chapter 2

DATA MANAGEMENT ACTIVITIES FOLLOWING SITE VISITATION

Data management activities occur whenever there is any interaction between the investigating agency and the site being investigated. Some of these activities are of such a "common sense" nature that they have only been mentioned in passing in Chapter 1. A detailed set of activities that might be viewed as data management was included in Chapter 1 (Activity Block 7: Onsite Data Reduction). When the data collection team returns from a site visit, a major data management effort takes place. It is this set of procedures (indicated in Figure 2 by Activity Blocks 9 through 18) that this chapter addresses.

This chapter will "walk" the potential user of this methodology sequentially through the major data management activities to the generation of tables pertinent to a single case (site) and the generation of cross-case analyses and displays. The following major headings will be used. They correspond to the Activity Blocks displayed in Figure 2:

Activity Block 9: Coding Questionnaire Data
Activity Block 10: Coding Outputs
Activity Block 11: Coding Work Requirements Data
Activity Block 12: Category Set Development
Activity Block 13: Checking Coding Consistency
Activity Block 14: Computer Storage of Data in Prototype Data Bank
Activity Block 15: Checking of Data Reliability
Activity Block 16: Analyzing and Displaying Data Across Cases
Activity Block 17: Computer Output of Profile Tables
Activity Block 18: Coordination of Data Input and Storage

Activity Block 9: Coding Questionnaire Data.

Output Index:

E-40 Coding Questionnaire Data (component, production)

Output Map:

E-40

E-40 Coding Questionnaire Data

By the time that Forms 02, 03, and 04 are ready to be prepared for data input, some coding has already been performed. This coding concerns such things as the assignment of project identification numbers, personnel identification, region numbers, the determination of project focus, project complexity, stage of completion, secondary foci, and project role.

This coding involves the use of some judgment and therefore must be performed by someone familiar with the project in question. This responsibility is usually assigned to the data collection team leader.

The coding which remains to be done consists of determining an appropriate code number from a list of code numbers for each item or question on Forms 02 and 03. The codes require no judgment beyond that of recognizing which category within a variable has been indicated by the respondents.

The codes to be utilized in coding Form 02 and 03 items are contained in Appendices 3 and 4. The appendices indicate which questions on Forms 02 and 03 require coding, what variable/level combination each question corresponds to, and what each code number represents. Form 04 information does not need to be coded as each respondent indicates by his numerical response which category of response he intended.

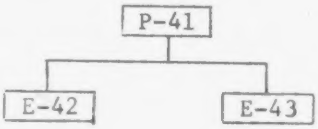
After these codes are determined, the data are ready to be prepared for input to the computer. At this point a decision must be reached as to whether hand tallies or summaries of the open-ended questions or other data which are not utilized in the computer data-storage files are to be obtained. If the answer is in the affirmative, then an individual must be assigned to perform a hand summarization of the data.

Activity Block 10: Coding Outputs.

Output Index:

P-41 Coded Outputs (component, production)
E-42 Confirmation of Data Collection Team's Coding (facilitating, management)
E-43 Output Coding (component, production)

Output Map:



P-41 Coded Outputs

Coding, as performed by the Coding Resolution Team, is a time consuming job performed by at least a two-man team. For planning purposes, an average time could be considered to be 6 working days (for a two-man coding team), to code the data gathered by a three-man data collection team during a 1 week site visit. This time estimate is subject to many variables, but assumes that an average day of coding would consist of approximately 5 hours of coding time (10 man-hours). The coding team will develop proficiency with practice and familiarity with the category sets. Other variables include the proficiency of the data collectors, the availability of the interviewers, the quality of the recapping, etc. Approximately 50% of coding time is consumed by output coding. All output codings are entered on Form 05-B.

E-42 Confirmation of Data Collection Team's Coding

Though the data collection teams are charged with coding columns A, B, and W, all entries made by them must be checked and confirmed.

1. The first output coding step is to verify the project identity number and page numbering, and to compare the output map with Form 05-A to insure that the output listed on the 05-A also appears on the output map and is properly identified on both documents by the same identification number.

2. Next, all output titles on the 05-A are read to insure both legibility and understandability. If any are lacking in these respects, the appropriate data collection team member (interviewer or team leader) is called in and a mutually acceptable descriptive output title is agreed upon and recorded on the 05-A. Form 05-A lists all outputs identified relating to a project/site.

3. The 05-A list is next compared with the data in 05-B to insure that page numbering, project identity number, and output identity numbers match between the two forms. (Identity numbers are on both forms - titles are on 05-A only)

4. On Form 05-B, those outputs around which interviews were conducted are indicated by interviewee numbers appearing in one or more of the center columns. For convenience and rapid referencing, these outputs can be asterisked in the left margin of both Forms 05-A and 05-B.

5. All spaces on 05-B, other than interviewee numbers, are coded for every output identified, whether it is interviewed around or not. Column A coding identifies the structure of output: #1 indicates a product, #2 indicates an event, and #3 indicates a condition. (Set A - Class)[1]

6. In similar fashion, column B (Set B - Level) and column W (Set W - Completion) are checked and confirmed. If items are missing or not understandable, then they are resolved in conference with data collection team members.

At this point in the output coding, all project outputs identified for the site have been numerically described as follows:

1 by a discrete identity number (output identification)
2 by structure (a product, an event, or a condition) (A)
3 by level (focal, component, or facilitating) (B)
4 by stage of completion (completed over a year ago, completed 3-12 months ago, completed within last 3 months, currently in progress, not yet started, or ongoing) (W)

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[1] All category sets referenced in this volume are in Appendix 4.

E-43 Output Coding

Columns CDE, FGHI, Y, Z, and "a" remain to be coded. Column Y (Set Y - Project Focus) is an entry that is identical for all outputs of a site and represents the project focus (e.g., a research project, a development project, a diffusion project, or an evaluation project). This designation was tentatively determined for each project during site selection. However, it is sometimes changed subsequently. Either the project title or its description may have conveyed the impression that its activity related principally to one focus, when its actual focus, within the definitions used by this project, proved to be something else. This could happen because a different definition of research, development, diffusion, or evaluation was used by the people who wrote the proposal for the project being visited. More likely, it was something in the wording that implied a focus based on the definitions used by this project. In any event, the existence of a different principal focus from that originally identified may be confirmed.

Usually some intimation of a difference in definitions, at least as a possibility, will occur during the initial site visit, but may need to be confirmed during the team visit. Or, it could be that the focus of a number of focal or other outputs consistently indicates that the majority of the effort within the project supports a focus different from that previously identified. For example, a preponderance of implementation outputs in a project thought to be a research project could require that the project designation be reconsidered.

1. Column C (Set C - Character) represents the character of the output itself. Its determination is the responsibility of the coding resolution team, and may involve the use of decision rules.[2]

2. Column Z (Set Z) indicates the character of the focal output to which a component or facilitation output contributes. In column Z all focal outputs are coded as being focused on themselves, and outputs supporting the project generally are coded with the focus of the project.

3. Column "a" reflects the function served by the output. There are three classifications used to designate functions: 1 = Policy, 2 = Management, and 3 = Production (Set "a" - Function). Again, as in most of the categories, decision rules have been developed to assist in this classification.

4. The two remaining columns, one labeled DE and the other FGHI, are category sets that cluster outputs of similar nature. Originally, the FGHI set (primary category) was expected to be a complete listing of all outputs. However, it was soon

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[2] See Appendix 5.

obvious that different sites produced nearly identical outputs, and were coded with the same FGHI number (hence, a primary categorization). As the FGHI list of primary categories grew to unwieldy size, primary categories that had commonalities were clustered (hence, DE - Cluster Categories).

In operational usage, the DE coding is determined first as a gross indexing which in turn leads more quickly to determining an appropriate FGHI code. Both DE and FGHI sets are open ended and can be expanded as the incoming data warrant. The coding resolution team either selects existing DE and FGHI categories fitting each output or uses the output to establish new categories if a fit with existing categories cannot be made.

5. To clarify the interrelationship between category sets A, DE and FGHI, the DE and FGHI categories are ordered uniquely under the three A codes. That is to say, any specific element of the DE or the FGHI set can only appear in one of the three A codes, as a product, an event, or a condition. The DE set then designates a broad delineation of the item within one of those sets, largely by the purpose the output serves, in relation to other outputs with which it is dependency related.

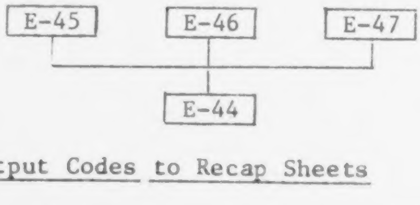
   This should not be confused with the designator applied in the B set, which project-specifically states whether a given output is focal, component, or facilitating.

Activity Block 11: Coding Work Requirements Data.

Output Index:

E-44	Transfer of Output Codes to Recap Sheets (component, management)
E-45	Coding Standards (component, production)
E-46	Coding Tasks (component, production)
E-47	Coding Enablers (component, production)

Output Map:



E-44 Transfer of Output Codes to Recap Sheets

Within a package of recap sheets (representing the data gathered from one interviewee, and numbered consecutively) are sets of Forms 06, 07, and 08 for each output. Taking one set at a time, the appropriate output code numbers are transferred from Form 05-B to the recap sheets.

Each sheet (whether Form 06, 07, or 08) related to one output is marked identically. This action is taken on each set of recap sheets until a package is properly marked. Each of the following packages is handled in the same way until every recap sheet for the entire site is properly marked. This transferral action, though clerical in nature, is performed by the code resolution team. Meticulous attention to accuracy at this point is critical. Subsequent insertion of data into the computer is made from Form 05-B and separately made from the recap sheets. Later analyses and sorts retrieve from both sets using the code numbers common to both. The two sets of code numbers must be identical.

At this point in the coding process only one column labeled "Page No." remains blank on all recap forms. This column is used by the data analysis team when sorting pages for computer insertion. Note that these packages of forms ultimately get two sets of page numbers, one (page __ of __) which serves coding resolution purposes, the other for computer insertion purposes. (See step 27 in the section of this chapter on coordination of data inputs and storage.)

E-45 Coding Standards

Standards are considered in relation to their associated outputs in the next coding step. If the standard is used to judge the acceptability of the output itself, category set J-1 is inspected to seek an appropriate category. If the standard is used to judge the process or operation leading to the output, an appropriate category should appear in set J-2. The two coders, working separately make their selections of categories and then compare choices. Concurrence must be reached. Lack of concurrence may indicate that a new category is required. Assuming that the coders agree upon a category, that category number is placed in the column preceding the statements (J-LM). The K column has already been filled in by the recapper. (If not, the coders must determine the self-others status by discussion with the recapper.) This procedure is repeated for each standard statement related to the first output as recapped from the first interview.

If a statement is found to be inadequate, the person who wrote it is called in or contacted. For example, a standard statement may read, "Whether or not ...." This is an inappropriate wording for a standard. The wording needs to be changed so that what appears is a standard of acceptability. Failure to meet the acceptability standard automatically implies nonacceptability. Another example statement might be, "The language is appropriate to the target audience." This form will usually be considered insufficiently specific to use as a working standard. In what way does the language have to be appropriate to the target audience? It could be that the level is such that the audience can understand it. It could be that it avoids words or expressions that might be offensive to the target audience. More positively, it could imply that language is used that excites the target audience's interest in the subject matter.

If the interviewer who recapped such a statement as this has no further information to elaborate, this is a good occasion to sensitize him to the need for probing to insure that his data are gathered at an appropriate level. However, the interviewer may have sufficient data on his interview tape to determine what is needed and may be able to more clearly and definitively recap the inadequate statement.

E-46 Coding Tasks

The basic procedure used with standards is repeated for tasks, but tasks have their own peculiarities. One of the tendencies in writing tasks has already been mentioned in the instructions for recapping: the use of statements (particularly clued by the use of certain verbs) that are too gross, such as "oversee the work of subordinates in the department." Of what does overseeing consist? What did the interviewee do that constituted overseeing?

Another weakness often found in task description is that the wording does not adequately identify what work is performed. It may have been quite evident to the interviewer from the context of the interview. If not, he would have pursued the questioning for clarification. In writing down the response, recappers sometimes tend to omit what, at the moment of writing, seems "obvious," whether it be the verb (not very often), the item acted upon, or a necessary qualifier. This was discussed under "Recapping" (Chapter 1) at some length.

Tasks have a two-level arrangement of category sets. The NO code describes the first-level designation of the task. Within each NO code, there is a subset of codes with QR designators, unique to that set. Thus the QR designator "01" will have a different meaning in the NO set "15" from that in NO set "16" -- or in fact in any other NO set. Once concurrence is achieved, the coding resolution team enters the selected task category numbers in the appropriate column on Form 07.

The P code, like the K code for standards and the T code for enablers, is one the recapper should have inserted to indicate whether the interviewee does the task himself (enter "1"), if other(s) do it (enter "2"), or if the interviewee does it in collaboration with other(s) (enter "3"). If the recapper has not entered these codes, the proper entry may be obvious. For example, he may include the relevant pronoun, "I read what someone else has written," "We discussed the significance of the data," "They report to me what they have found," etc. Wherever the wording does not provide a reliable clue for this coding, the matter should be checked with the recapper. This procedure not only insures that this coding is accurate, it insures that it will be filled in by the recapper next time.

E-47 Coding Enablers

In coding enablers, the recapper should have filled in the J and K codes, to identify whether the statement represents a knowledge, skill, or sensitivity, and whether it represents such an enabler possessed by the interviewee, or by someone else, or by all members of a team. The context can be very important in determining into which category an enabler falls.

The trained interviewer is in the best position to determine where the wording may leave the matter dubious, because he possesses the context of the interview in which the response was evoked. The "lead" words are not always reliable. For example, an interviewee may say, "I have to know when it is appropriate to raise a certain issue." The word "know" immediately implies that he is going to describe a knowledge, but the rest of his statement suggests that he is in fact talking about a sensitivity.

It would be hoped, in the above example, that more precise information was obtained: "appropriate" could mean "relevant" or it could have other connotations. If the meaning was that of relevance, then the statement could be more representative of knowledge out of which relevance would be recognizable, or of the skill in making such a recognition. A good interviewer would probably have obtained responses to indicate all three (or some similar) enablers.

If the J and K codes have not been provided by the recapper, the coding resolution team must either determine the proper codes from the statements themselves or by conferring with the recapper.

Once an enabler statement has been confirmed as being a knowledge (1), a skill (2), or a sensitivity (3), the coding resolution team selects, from the appropriate list, the most nearly matching category or creates a new category if none fits. Once concurrence is achieved, the code numbers are entered in the appropriate columns on Form 08.

Each set of recap forms for each output is completely coded until the entire data from a site have been completed. New categories are added to the appropriate sets as the coding resolution team determines that data do not fit an existing category. In this way the coding category sets are developed empirically.

Upon completion of coding, each copy of each form used (05-A, 05-B, 06, 07, 08) is stamped as approved by the coding resolution team and all data from that site are returned to the Coordinator for Data Inputs for further processing.

Activity Block 12: Category Set Development

Output Index:

E-48 Empirical Expansion of Category Sets (component, production)

Output Map:

E-48

At any one point in time during the employment of this methodology category sets for coding data are in existence.[3] One primary sought-after output of such employment is a group of category sets that most accurately and completely describes the domain. To achieve the most accurate and complete descriptions possible, the category sets must be applicable to any data collected. If they cannot be so applied (i.e., data do not appear to be classifiable), then the category set in current use is not accurate and/or complete. Only by expanding the category set to make possible its use in classifying those data can the category set be again considered adequate for the sample of data obtained.

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[3] See Appendix 4 for current category sets.

E-48 Empirical Expansion of Category Sets

In view of the above concept, the coding resolution team attempts to code all incoming data (both output data and work requirement data) using the existing category sets and decision rules.[4] If part of those data cannot be classified within the existing categories, it indicates that the categories need expansion.

The coding resolution team carefully considers each unclassifiable piece of data, discusses that item of data from all viewpoints, and only after serious and comprehensive study, creates a new classification to fit the data in question.

(Virtually all of the existing category sets were developed or modified in this manner during the Oregon Studies).

Each data set is considered as "open" to change (or as being currently complete in light of the data brought in from the "real world").

As this methodology is employed in other contexts, the category sets will become increasingly stable and therefore more universal in their ability to describe the domain from which the data was drawn.

In expanding the category sets, the coding resolution team must fully evaluate the consequences of their actions. They must detect when they are trying to "force fit" data into a category. If this force fitting has been done in several cases, and then subsequently a more appropriate category is created, considerable recoding may have to be done to correct the previous force fitting.

If the application of this methodology includes interfacing of the data with the Oregon Studies data bank, any expansion or modification of the existing category sets and the decision rules applying to the use of new or modified categories must be documented so that the interface may be appropriately accomplished.

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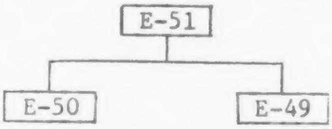
[4] See Appendix 5.

Activity Block 13: Checking Coding Consistency

Output Index:

- E-49 Coding Consistency Instrument Construction for the Data Collection Team (facilitating, management)
- E-50 Coding Consistency Instrument Construction for the Coding Resolution Team (facilitating, management)
- E-51 Coding Consistency Data Analysis (facilitating, management)

Output Map:



The value of any method for data collection is directly dependent upon the consistent reduction of raw data by the data coders. Consistent coding requires thorough training including discussions of decision rules, coders' biases, and systematic procedures to resolve coding problems. For this aspect of the methodology the coding of interview derived data is done by a coding team of two or more people.

E-49 Coding Consistency Instrument Construction for the Data Collection Team

A number of important decisions as to the coding of data must be made by the data collection team. This is primarily due to the context within which data are collected. As an example, determining whether an enabler is a knowledge, skill or sensitivity is heavily dependent upon the words utilized by the interviewee in describing a particular enabler. In some instances the statements could not, in recapping, carry the essential message as to what class of enabler was represented. It is therefore necessary to require the interviewer to supply both a narrative statement and a code number. In addition each data collection team should mutually determine both the level and the structure of each output.

A test of reliability for the site visitation team consists of:

1. Checking the consistency of coding for enabler statements to insure that the correct enabler (knowledge, skill, or sensitivity) category is used,
2. Checking the coding of narrative output statements on the basis of level, and
3. Checking the coding of narrative output statements on the basis of structure.

E-50 Coding Consistency Instrument Construction for the Coding Resolution Team

A major problem in the determination of code consistency is the provision of "objective" criterion against which a code may be judged.

The coding resolution team has the responsibility for coding narrative statements according to Output, Standard, Task and Enabler category sets. The activities engaged in require that each narrative statement receive a code number from one of the appropriate category sets. Any instrument or technique developed to check reliability should therefore require that each coder interpret narrative statements and determine either an Output, Standard, Task or Enabler code for each.

The coding of such narrative statements is dependent upon a number of factors which must be recognized if an accurate measure of reliability is to be achieved. In the coding of narrative statements utilizing the Output category set the coder should be provided with:

1. The narrative statement
2. An output map which includes the narrative statement
3. The statement identification number
4. The Level Code
5. The Structure Code
6. The Stage of Completion Code

An output map is essential because the specific coding is context dependent. The map provides the coder with some degree of insight into what each narrative statement may represent in relation to other outputs. Items 3-6 are supplied by the interviewer and recorded on Form 05-B. The coding team is therefore not expected to provide these codes.

The coding team will code each narrative statement in terms of:

A. A Primary Output Category number
B. A Cluster Output Category number
C. The Output Function
D. The Output Character

In coding Work Requirement data the coding resolution team requires the following information:

1. The codes determined above and recorded on Form 05-B
2. The narrative statements of outputs
3. The output map
4. Knowledge, Skill or Sensitivity code for Enablers
5. Code for Self-Other report

With the above information in hand, a category number for each Work Requirement statement is to be determined by the coding team. This coding is directly related to each statement of output. Work Requirement data are directly linked to specific outputs by way of the interview process, and the reliability of coding must therefore duplicate these conditions by providing Work Requirement statements in relation to specific outputs. As an end result of coding, category numbers will be determined for:

A. Primary Standard Category number
B. Primary Task Category number
C. Cluster Task Category number
D. Primary Enabler Category number

E-51 Coding Consistency Data Analysis

In determining the consistency of the coders, individually or as a team, three basic comparisons can be made. The first step in making any of the three basic comparisons is the tabulation of the number of "correct" items, i.e., those codes which match the criterion code for each narrative statement, and the number of "wrong" items. When these quantities have been determined for each coder or team, the appropriate consistency comparison may be computed.

One type of comparison involves the determination of deviation between the percentage of coder agreement with the criterion and an arbitrary percentage of agreement which indicates high consistency. This comparison can be handled in two ways. The most direct method is to require each coder to exceed the arbitrary percentage of agreement. The other method is to compute a score which gives the standard deviation between the rater's percentage of agreement and the arbitrarily selected percentage of agreement. This Z score can be interpreted by entering a normal curve table and determining the probability of a deviation that large occurring by chance. The Z score is used as a test of significance is used, but the significance levels considered acceptable are lowered from the usual .05 and .01 levels. If the Z value is too large, the rater is judged to be inconsistent with the criterion. Most elementary statistics texts include directions for computing the Z score and determining levels of significance.

A second comparison, which provides a determination of test-retest consistency, utilizes the Chi-square statistic. The frequency tallies which have already been prepared as described above for the pre- and posttests are combined in a 2 x 2 frequency table such as that shown in Figure 12. Once the Chi-square value is computed, its value, and the appropriate degrees of freedom, may be used to enter a Chi-square probability table to determine if the distribution of correct and incorrect responses are sufficiently similar to say with some assurance that the two tests were coded consistently. A low Chi-square value with a high probability of chance occurrence indicates that the differences between the distribution of correct and incorrect responses for the two tests are very similar. One caution must be noted here. A low Chi-square may be obtained in two ways. Either the coder has consistently correct responses, or consistently incorrect responses. In both cases a low Chi-square value may result. Therefore, the Chi-square value must be interpreted carefully since a low Chi-square value when the responses are predominantly incorrect indicates a consistent coding performance. This test-retest situation may be extended to more than 2 tests, in which case a K x 2 Chi-square value must be computed, where K is the number of tests.

	correct	incorrect
Pretest 1		
Posttest 2		

Figure 12. Chi-square matrix for pre- and posttest results.

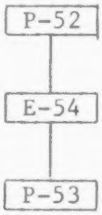
A third comparison is one which compares 2 or more raters on a single occasion. This comparison can be made in reference to agreement with the criterion or with reference to the agreement between raters on the coded statements. In either case a K x 2 Chi-square value is computed, where K is the number of raters to be compared simultaneously. The same interpretations and cautions apply to this comparison that were mentioned above for the second type of comparison.

Activity Block 14: Computer Storage of Data in Prototype Data Bank

Output Index:

P-52 Prototype Data Bank (component, management)
P-53 Data File Specifications (facilitating, management)
E-54 Data File Creation (component, production)

Output Map:



P-52 Prototype Data Bank

In any activity designed to generate the quantity of data implied by this methodology, the manipulative capabilities of a computer system are required. Design problems are at once apparent when it is observed that the extent and form of the data being collected remain unknown as long as categories remain open and subject to change. The possible combinations of data which might need to be available to answer newly conceived questions are also unknown. It is necessary, therefore, to build an "unsophisticated" computer system capable of dealing with these uncertainties. Emphasis is placed on the design of data files which provide maximal flexibility. In effect, the computer programs required, do little more than sort, a task which, in some cases, might best be performed by standard sort/merge types of routines. In short, the prototype data bank requires the "design of a computer storage and retrieval system capable of storing and retrieving an unknown kind and amount of data to be used in as yet undetermined ways."

P-53 Data File Specifications, and
P-54 Data File Creation

Once the data have been coded they may be placed on data coding forms to facilitate the transfer of the data to an appropriate machine readable form (i.e., punch cards, paper tape, or magnetic tape). Detailed descriptions of the content of each data file are contained within Appendix 8. All files created by the Oregon Studies were sequential in form due to machine constraints. The deficiencies in data retrieval resulting from this approach could be corrected through the use of randomly accessible files which would reduce retrieval times considerably. The Appendix 8 listing of the files include the names of the variables, their order of presentation, their format, the type of data they represent, and the work form and question numbers from which the variable values are derived. As a general rule the data should be checked digit by digit after it has been placed on the coding forms and before it has been converted to the machine readable form.

More specifically, the following procedures should be followed in converting the data to a machine readable form:

1. Project descriptor data (Level 1) from Form 02 should be placed on the data coding sheets utilizing the spacing described in Appendix 8. There will be one record for each project and these records should be placed in ascending order by project number (Variable 1). Each of these records will consist of 65 variables and will be represented by 129 digits.

2. Personnel descriptor data (Level 2) from Form 03 should be placed on the data coding forms utilizing the spacing described in Appendix 8. This data set will consist of one record for each person interviewed and these records should be in ascending order, first by project number (Variable 1) and then by personnel number (Variable 2) within each project. Each of these records will consist of 135 variables and 201 digits.

3. Output descriptor data (Level 3) from Form 05-B should be placed on the coding sheets utilizing the spacing described in Appendix 8. There will be one record for each output identified within each of the projects. These records should be in ascending order, first by project number (Variable 1) and then by output number (Variable 2) within each project. Each of these records will consist of 17 variables and 35 digits.

4. The Scaled data (Level 4) from Form 04 should be placed on the coding forms as depicted in Appendix 8. Here, as at Level 2, there will be one record for each person who is interviewed. These records will be ordered the same way as those at Level 2. Each Level 4 record will consist of 99 variables and 106 digits.

5. Standards descriptors (Level 5) from Form 06 are to be put on coding sheets in a form which differs slightly from the Appendix 8 descriptors. Because there may be multiple standards for each output, a record of this data set consists of the entries on a coded Form 06 page. This special format consists of descriptor data common to all of the coded standard statements for an output, along with up to 20 coded standard statements. If more than 20 standard statements appear with an

output, a new record is begun with a reiteration of the common data. Using this special format there is a reduction in the chances of miscopying a portion of common information, it is vital to insure that this common information is correct because an error at this point may be multiplied up to 20 times in the final data set after the data conversion program has acted upon it. One data record contains all standards data, up to 20 statements, for one output. This data set is sorted first by project number (Variable 1) and then by personnel number (Variable 2) within each project.

6. Task descriptors (Level 6) from Form 07 are to be placed on the coding sheets according to the Appendix 8 format. The general format for this data set is similar to that used for the Level 5 data in that a record consists of data common to all of the tasks on a form page along with up to 20 coded task statements from the form page (all task statements for one output/record, up to 20 task statements). These records are to be sorted first by project number (Variable 1) and then by personnel number (Variable 2) within the project.

7. Enablers descriptors (Level 7) from Form 08 are to be placed on the coding sheets. The general format for this data set is similar to that used for the Level 5 and 6 data. These records are to be sorted first by project number (Variable 1) and then by personnel number (Variable 2) with each project.

8. Three "new" files must now be created in addition to the seven basic data sets. These "new" files merely consist of copies of the Standard, Task, and Enabler data sets which are to be re-sorted. They must be sorted by project number (Variable 1) and then by output number (Variable 3) within a project, instead of by personnel number within a project.

This process provides the 10 data sets needed for complete operation by the main program. Each of these 10 data sets must now be used as input to the data conversion program PRECON (Appendices 2 & 3) which takes each data set and performs the necessary operations to produce 10 binary mode data files which will be used by the main program. For the Project descriptors data set (Level 1) and the Personnel descriptors data set (Level 2) the program selects the variables marked by an asterisk in Appendix 8 and writes binary records which contain only these variables. This set of records, called Level 1-b and Level 2-b are the so-called "sort" sets.

The Standards data sets, Task data sets and the Enablers data sets, Levels 5, 6, and 7, respectively, are expanded by the program. The common information on each record of the original data sets is written in binary along with each of the coded Standard, Task, or Enabler statements. For each record in the original data sets, the data conversion program will produce up to 20 binary records, one for each coded statement.

The 10 binary data files produced by this program provide the data input for the main program and its sorting routines.

Activity Block 15: Final Checking of Stored Data

Output Index:

E-55 Verifying the Computer Inputs (component, management)
E-56 Confirming the Logical Consistency of Items Coded to a Category (component, management)

Output Map:

E-56 E-55

E-55 Verifying the Computer Inputs

Following the translation of data into card or tape format and the subsequent listings of the cards and/or tape, the listing is verified with the source documents. It must be kept in mind that for certain of the data elements a single input error can be magnified many times as a function of the amounts of other data elements linked to it. For example, an output having 50 work requirement data elements linked to it and improperly entered as a research output would result in the listing of those 50 elements within the wrong category.

E-56 Confirming the Logical Consistency of Items Coded to a Category

Once the computer inputs are verified, the first opportunity for examining the integrity of the classification of items to various categories presents itself. Procedurally, this simply involves the selection of each category for which such verification is desired, and preparing a listing of all items coded to that category using the raw recapped statements or labels contained in Forms 06, 07, 08, or 05-A as appropriate. In some cases, a computer printout will facilitate this task by identifying the location of each of the relevant statements or labels.

Once a listing is prepared, a visual "content analysis" of the items can be made to assess the appropriateness of each to the category. There are three probable explanations for the inclusion of items that appear inappropriate; (a) errors in computer input; (b) errors in coding or recording the code; or (c) inadequate or inappropriately worded statements or labels that lead to misunderstanding of the item in the context of the category in which it is listed.

Given the appearance of an item that "looks out of place," the following procedures may be followed:

1. Identify the location of the original documentation of the item (i.e., recap sheets, Forms 05-A or 05-B).

2. Compare the code given that item with the code of the category being examined. Discrepancy at this point indicates an error in computer input.

3. If there is no discrepancy at step 2, refer the item for verification of coding. A necessary change at this point indicates an error in original coding or recording, and a correction of the computer input is made.

4. If the computer input and item coding are verified, the item must again be reviewed in the context of its occurrence (i.e., project, outputs, etc.), and a judgment made as to the adequacy of the wording used to describe the item. Any changes made at this time are solely for the purpose of more clearly describing the item. By providing such clarity, a potential reader is better able to understand why the item was classified as it was.

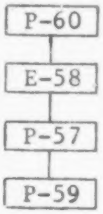
Upon completion of the activities within this block, preparations for the processing and display of data are complete.

Activity Block 16: Analyzing and Displaying Data Across Cases

Output Index:

P-57 Computer Program Descriptions (facilitating, management)
E-58 Computer File Manipulation (component, production)
P-59 Control Card Descriptions (facilitating, management)
P-60 Examples of Retrieval Requests (component, production)

Output Map:



P-57 Computer Program Descriptions

Once the data have been coded and entered into an appropriate storage medium, the user is ready to retrieve portions of these data to help answer questions about educational RDD&E. The types of questions that may be asked are limited primarily by the ingenuity of the person asking the questions. To facilitate this question-asking process, a computer program was developed which allows a user to display data which he feels are necessary to answer his question. This program consists of a main program (RDDE7) and several subroutines and functions which perform various specialized tasks.

These subroutines and their respective tasks are as follows:

1. Subroutine SORT performs a sorting function on records in a particular data file by matching user supplied

criterion against selected variables in the data set and, if a match occurs, writing the record on a scratch file.

2. Subroutine TABLEF takes the data from the scratch file produced by SORT and, with instructions provided by the user, prepares contingency tables of one, two, or three dimensions.

3. Subroutine MEAN4 is a special purpose routine for one of the data sets which computes means, standard deviations, percentage of "zero" responses, and percentage of responses greater than three for each variable.

4. Subroutine HEADER reads an alphanumeric array which is used as line printer identification for each set of tables requested.

5. Function ISO computes an appropriate subscript in a single dimension from multiple dimensions in order to more efficiently utilize available core sortage, since the CDC 3300 does not support variable array sizes.

6. Function LIMIT returns the maximum value of a variable for any variable in any data set. These values are used by function ISO to compute the subscripts.

Appendix 6 contains listings of each of the computer programs developed for the Oregon Studies. Appendix 7 contains flow charts for each of these programs.

E-58 Computer File Manipulation

The main program RDDE7 uses seven basic data files which may be viewed as being, roughly, in a triangular arrangement as illustrated in Figure 13. The first level, or apex, of the triangle consists of project descriptors derived from Form 02 information. These variables and their sources are shown in Appendix 8.

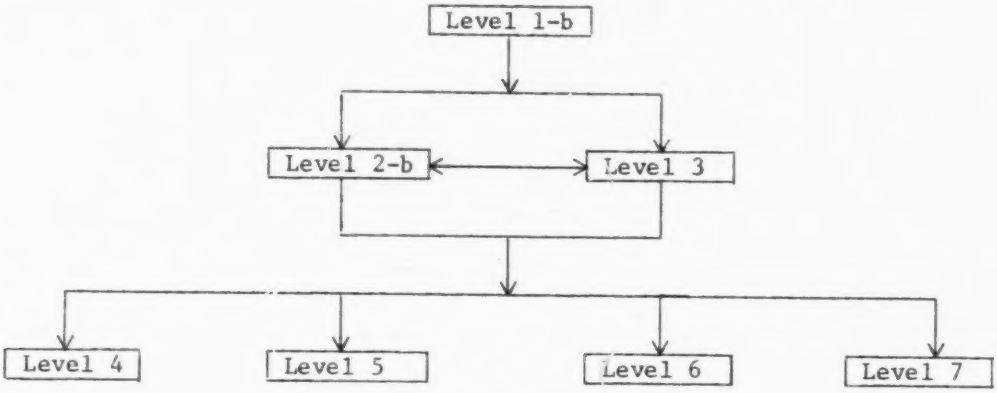


Figure 13. Levels of data files.

From this apex, the user has a choice of going to either of two files. These are labeled as Levels 2 and 3 in Figure 13, respectively.

1. Level 2 is a set of personnel descriptors and, like Level 1, this level has two sets. There is a "complete" set of variables which have been derived from information contained in Form 03 and there is a "SORT" set which is a shortened version of the "complete" set. These sets are shown in Appendix 8 for the "complete" and "sort" (asterisk) versions.

2. Level 3 is a set of output descriptors which are taken in total from Form 05-B and are shown in Appendix 8. From either of these two data files the user may choose to go to the other data set at the same level, go to any of the lower levels (4, 5, 6, 7) or go back to Level 1.

The base of the triangle consists of Levels 4, 5, 6, and 7 which are derived from Forms 04, 06, 07, and 08, respectively.

3. Level 4 data are shown in Appendix 8. These data consist of responses to Hemphill scale items which describe tasks that people in educational RDD&E may engage in as part of their jobs.

4. Level 5 data pertain to standards information coded on Form 06 (Appendix 8).

5. Level 6 data pertain to task information coded on Form 07 (Appendix 8).

6. Level 7 data pertain to enabler data coded on Form 08 (Appendix 8).

P-59 Control Card Descriptions

To illustrate the process of displaying information using this program, several examples will be followed through in detail. These examples will show the use of the major options in the program, and also will illustrate the possible interconnections between the various date files. Before the examples, however, a general outline of the required and optional card image records and the variables represented on each is given.

The first record (A), which is required, is an alphanumeric array of up to 120 characters starting in column 1. This array is read by subroutine HEADER, is printed at the beginning of each table, and is used as a specific identification for a particular set of tables. The next record (B), indicates to the program the level of data on which it will next be performing its functions. The variables represented on this record and their format are as follows:

1. Level to be sorted (I2). Variable one level to be sorted can take on values between 01 and 07. If values other than these are entered the program will stop execution or abort, depending on the value.

2. "Real" sort to be performed (I2). Variable two is an indicator variable. If its value is greater than zero, the user is indicating that he has one or more variable/level combinations which he wishes to hold constant at this level. This type of sort will be referred to as "real" to differentiate it from a "nominal" sort in which all variable/level combinations for a particular level are used.

3. Logical unit number of tabling instructions (I2). Variable three indicates that tables will be made from data at this level if the value of the variable is greater than zero and the specific value given by the user is used by the program of the logical unit number for the file containing tabling instructions.

4. Cross-sort between Levels 2 and 3 (I2). Variable four is used to indicate that the user wishes to perform sorts on both Levels 2 and 3. If this type of sort is desired, after a sort on Level 1 is called the next record indicating the sort level must have this variable set equal to one, to indicate the first part of the cross sort, and the next record indicating the sort level must have this variable set equal to two. If no cross sort is to be performed, this variable is to be set equal to zero. If this variable is set at zero, the next record indicating a sort level must either be one, or it must be four or greater.

5. Perform means and percentage analysis if this is Level 4 (I2). Variable five is set greater than zero when variable one is set at four to indicate that the user wishes to perform the means and percentages analysis on the Level 4 data (the only place this analysis is appropriate).

The next record (C) is an optional one. Records of this type are used only if variable two on record B is greater than one, indicating that the user wishes to hold some variable/level combinations constant.

1. Number of variable/level combinations to be controlled (I3).
2a. Variable number (I3).
2b. Level code (I3).

Repeat 2a and 2b until there are as many pairs as indicated in variable one. Variable one appears as the first three digits and variables 2a and 2b are repeated with up to 20 pairs on each card image.

At this time up to 50 variable/level combinations may be controlled at each level. When the user wishes to identify a new set of tables and start a new series of sorts, a record of type B, with variable one set equal to zero, will cause the program to function as if it were starting execution from scratch by rereading a new line of header information. To make the program function properly (if the user is not interested in "real" sorts on Level 1 and Levels 2 or 3), "nominal" sorts MUST be made at Level 1 and either Level 2 or Level 3. This is necessary to provide the program with the information that it needs to perform "real" or "nominal" sorts at Levels 4 through 7. At these lower levels, unless tables are to be made, "nominal" sorts should not be made, since they serve no useful purpose.

If variable three on record type B is greater than zero, indicating that some tables are to produced at that level of sort, then tabling instructions must be included on the logical unit indicated by the value of variable three. The information needed to produce tables is as follows:

1. Variable number of rows (I3).
2. Variable number of columns (I3).
3. Variable number of levels (I3).
4. Option 1 (print 1-dimensional table as row table) (I3).
5. Option 2 (compute and print summation level) (I3).

The first three of the preceding variables provide the program with the number of the variables which the user wishes to occupy the positions of rows, columns, and levels. If the output being produced is one-dimensional, the user has the option of having either a row table produced across the page or a column table produced down the page. If variable four, Option 1, is greater than zero, a single-dimensional row table is produced, i.e., spaced across the page. If this variable is blank or zero, then the table is printed down the page and all categories that have a frequency tabulation of zero are not printed. In a similar manner, if a two-dimensional table is being produced, any row which has a frequency of occurrence of zero over all categories (row total is zero) is not printed, and in a three-dimensional table any level that has all zero entries in its cells is also deleted from printing.

In order to make tables more readable it is sometimes necessary to print them somewhat differently than they may appear in a report. Since the printer page is relatively narrow compared to its length, it is good practice to use variables with large numbers of categories in the row or level positions rather than the column position. This is because the row doubles back on itself and multiple lines are printed for each row with more than 20 categories which makes reading the table more difficult.

Any number of tables may be made at each level of sort. The tables produced are numbered in consecutive order as they are produced within one request. Each time the user uses the 00 code on a B type record, the numbers placed on the tables are restarted at zero. Care must be taken when matching the tables to the list of tables requested, since any time a sort reveals that there are no records which meet the user-supplied criteria, all tables which were to be printed for that set of data are deleted and an appropriate error message to that effect is printed on the output. Also, if this condition of no records meeting criteria was detected at either Level 1, 2, or 3, any sorts, and therefore table sets, for Levels 4, 5, 6, and 7 are deleted, and messages to that effect printed, until a record of type B is encountered which sorts at a level either lower than or at the same level as that for which there were "no records." If the "no record" condition occurs at either Level 4, 5, 6, or 7, only that set of tables is deleted.

P-60 Examples of Retrieval Requests

In order to illustrate the process of displaying information, several examples will be shown in detail. Since the sort portion of this program may be very time consuming at either Levels 4, 5, 6, or 7, it is advantageous to carefully plan the order and level of sort so that a minimum number of sorts are required. The same holds true for tabling. Sometimes the use of a second or third dimension in a table may eliminate the need for several sorts.

The first example is one in which task information is desired about those having a Doctor's degree working in research-focused projects. This request for information will require the use of information from three data files. Level 1-b indicates that variable two shows the focus of the project. Level 2-b indicates that variable seven shows the highest degree a person holds, and Level 6 contains task information. Assume that the information of interest is a listing of the frequency of occurrence of a specific task category (variable 12) which is desired for each major task category (variable 10). The header record needed to produce this information is as follows (these examples do not illustrate exact spacing, the reader is advised that this will depend upon implementation constraints):

```
Logical Unit 45
 Col. 1
     EXAMPLE--1----TASK INFORMATION-FOR-PHDS-IN-RESEARCH-FOCUSED-PROJECTS.
     0101000000              (calls "real" sort at Level 1)
     001002001               (sort variable 2, category 1)
     0201000000              (calls "real" sort at Level 2)
     001007001               (sort variable 7, category 1)
     0600010000              (calls "nominal" sort and tables on LUN 01)

Logical Unit 01
     012010                  (variable 12-rows, variable 10-columns)
     (file mark)
```

This sequence of instructions will produce a single, two-dimensional table with variable 12, specific task category, as rows, and with variable 10, major task category, as columns.

For the second example suppose that information was desired about master's and bachelor's degree level personnel working in development-focused projects who are working on outputs characterized as research. The information desired is level of output and focus of output, each compared with major task categories, major enabler categories, and major standards categories. The header information for this request is as follows (again the reader is cautioned that the spacing is not exact and only for illustrative purposes):

```
Logical Unit 45

(1)  EXAMPLE-2----CROSS-SORT-BETWEEN-LEVELS-2-AND-3
(2)  0101000000              ("real" sort, Level 1)
(3)  001001002
(4)  0201000100              ("real" sort, Level 2-cross to 3)
```

```
(5)  002007003007004
(6)  0301000200              ("real" sort, Level 3-from 2)
(7)  001016001
(8)  0500290000              ("nominal" sort, tables on LUN29)
(9)  0600290000              ("nominal" sort, tables on LUN29)
(10) 0700290000              ("nominal" sort, tables on LUN29)
     (file mark)

Logical Unit 29
     010006000000000         (variable 10-rows, variable 6-columns)
     010007000000000         (variable 10-rows, variable 7-columns)
     (file mark)
```

This set-up will produce six tables, two each for standards, tasks, and enablers. The same tables may be produced in another way by changing records (4), (5), (6), and (7) to:

```
(4)  0301000100
(5)  001016001
(6)  0201000200
(7)  002007003007004
```

The end result is the same, but this way sorts out research-focused products first, then sorts out bachelor's and master's level personnel. Also, records (8), (9), and (10) could have been placed in any order with the only change in output being the order in which the tables are printed. If any one of the sorts at either Level 1, 2, or 3 had shown a condition of no records meeting the criterion, then no tables would have been produced in this example. If, however, there had been additional sorts at either Level 5, 6, or 7 and the condition of no records meeting criterion was encountered, then only the tables for the level showing no records would have been deleted.

For the third example, suppose that information was needed to compare the responses on scaled data and task data for each of the foci that a project may take on, and then, in the same run, suppose that for evaluation-focused projects it was desirable to compare major task categories for each output function. The header records for this would be as follows:

```
(1)  EXAMPLE-THREE----PART-1--SCALED-AND-TASK-DATA
(2)  0101000000
(3)  001002001               (research projects)
(4)  0200000000
(5)  0400000001              (means and percentage analysis on Level 4)
(6)  0600290000              (tables on LUN29)
(7)  0101
(8)  001002002               (development projects)
(9)  02
(10) 0400000001
(11) 060029
(12) 0101
(13) 001002003               (diffusion projects)
(14) 02
(15) 0400000001
(16) 060029
```

```
(17) 0101
(18) 001002004                 (evaluation projects)
(19) 02
(20) 0400000001
(21) 060029
(22) 00
(23) EXAMPLE-THREE----PART-2----MAJOR-TASK-BY-OUTPUT-FUNCTION
(24) 0101
(25) 001002004                 (evaluation projects)
(26) 0301
(27) 001017001                 (output function - policy)
(28) 060030                    (tables on LUN30)
(29) 0301
(30) 001017002                 (output function - management)
(31) 060030
(32) 0301
(33) 001017003                 (output function - production)
(34) 060030
     (file mark)

Logical Unit 29
     006                       (output level)
     007                       (output focus)
     008                       (output major category)
     010                       (major task category)
     (file mark)

Logical Unit 30
     010                       (major task category)
     (file mark)
```

In the first part of the example it is necessary to return to Level 1 for each new set of tables, since one of the variables of interest was project focus. A "nominal" sort is required at Level 2 each time. Records (5), (10), (15), and (20) show the form necessary to call the means and percentage analysis for Level 4. Record (22) illustrates the use of the 00 sort level code to introduce a new set of tables. Part 2 of the example shows that it is possible to use one sort at a given level, Level 1 in this case, and then do repeated sorts at lower levels, holding the first sort constant for all further sorts. This example also illustrates that there is an alternate path from Level 1 to either Level 4, 5, 6, or 7.

These examples illustrate the uses of various options available in the program as well as the requirements of the program which, when followed and used properly, allow a wide range of data displays to provide information about educational RDD&E.

In addition to these computer-generated data displays, there is a possibility for other data displays derived from the data which were not computer stored and from other computer processing of already stored data. In the former case, this generally takes the form of hand tallies and/or summaries of data on the forms, which are not easily categorized for computer usage. Included in this category would be the summary of all of the "other" categories for the various questions. In the latter case, this takes the form of possible statistical analyses. For instance, if a two-dimensional table indicates differences in the distribution of frequencies, then it might be useful to perform a Chi-square analysis to see if the perceived differences are statistically significant.

On a more sophisticated level, a Q-type factor analysis can be performed on the data stored in Level 4. By correlating all possible pairs of people over their standardized responses to each variable, the correlations may be used as input to a standard factor analysis program to derive factors, which represent hypothetical people and, hopefully, may be identified in a reasonably concise manner.

Other analyses may also be performed depending on the questions which need to be answered and according to the resources available.

Activity Block 17: Computer Output of Profile Tables

Output Index:

P-61 Computer Generated Profile Tables (component, production)

Output Map:

P-61

P-61 Computer Generated Profile Tables

Approximately 50% of any profile presents and interprets the "hard" data obtained from that site (case). Though many different tables could be generated for each site, it is most practical to standardize the data displayed. In this way, comparison of the same type of information from many sites can be made.

There were six tables generated for each of the 20 sites profiled for the Oregon Studies project. In future uses of this methodology, the use of these six standard tables is recommended as being feasible.

1. Standards data -- Since there are two major categories of standards statements, two two-dimensional tables are generated:
    - (a) Output identification X Output standards (Set J-1/LM) (Variable 3 X Variable 12)
    - (b) Output identification X Processes/Operations standards (Set J-2/LM) (Variable 3 X Variable 12)
2. Task data -- Task categories are listed under 20 major headings (major task categories). One two-dimensional table is generated as follows:
    - (a) Output identification X major task categories (Set NO) (Variable 3 X Variable 10)

3. Enablers data -- Enablers data consists of information on knowledges, skills, and sensitivities used in the accomplishment of outputs. Three two-dimensional tables are generated as follows:

   (a) Output identification X Category set S-1/UV
       (Variable 3 X Variable 12)
   (b) Output identification X Category set S-2/UV
       (Variable 3 X Variable 12)
   (c) Output identification X Category set S-3/UV
       (Variable 3 X Variable 12)

The above six tables are printed out by the computer upon interrogation of the data bank for the variables as noted above.

These printouts are delivered to the Coordinator of Data Inputs and Storage for subsequent delivery to the profile writer.

If other data are of unique importance in profiling any particular site, special printouts can be requested by identifying the variables to be displayed and requesting or interrogating the data bank for the required tables.

Activity Block 18: Coordination of Data Handling

Output Index:

C-62 Coordinated Handling of Data (component, management)

Output Map:

C-62

C-62 Coordinated Handling of Data

The volume of data to be collected and handled as part of the distribution and processing of data inputs is such that its flow must be coordinated throughout the data collecting agency. This coordinating effort is necessary to assure efficient data retrieval and routing for use among agency personnel. Maintenance of data location records and follow-up to assure completion of data inputs, storage, reductions, analyses, and reporting are the primary tasks of the Coordinator of Data Handling.

The paragraphs which follow discuss the specific tasks involved in data handling. They are ordered sequentially and are expected to result in the output shown above.

1. Retrieve from the site selection team the Project Contact Record (Form 01) and the Project Selection Form (Worksheet 01), which should be attached to Form 01. If available, the Project information from Project Officer Form (Worksheet 02)

should also be obtained from the institutional representative who made the initial site contact.

2. As contacts are made with the site they should be recorded on the attachment to Form 01 and filed with it. The contact should be recorded by the person making it, and he should give the attachment to the Coordinator of Data Handling for filing.

3. Record the retrieval of Form 01 on the Chart of Project Information Status (Worksheet 18), assign an identification number to the project and record this number on the form as well as on the Project Identification Coding Chart (Worksheet 04). Also on Worksheet 04, fill in the other information required about the selected site.

4. Distribute a copy of Form 01 to the institutional representative selected to visit the site. (Note: The institutional representative, the visiting team for a particular site, and the dates of visitation will be identified by the site-selection team.)

5. File the original Form 01 and any extra copies, including attachments as they are received. (See step 2 above.)

6. After the institutional representative has returned from his onsite visitation, retrieve from him the Project Questionnaire (Form 02), the Product Interview Form (Worksheet 09), the auxiliary materials according to the Dissemination Brochure (Worksheet 08), any contextual cue items (Worksheet 11), the project proposal, and any notes, charts, etc. derived by him while onsite. Confirm that item #3 on Form 02 is marked as either 1, research; 2, development; 3, diffusion; or 4, evaluation.

7. Record the retrieval of these completed data forms on Worksheet 18 and apply the required codings.

8. Duplicate seven copies of Form 02, Worksheets 09 and 11, any notes, charts, etc., and each auxiliary item collected according to Worksheet 08, including the project proposal.

9. Distribute to the institutional representative and to each interview team member copies of all data input forms and materials collected by the institutional representative.

10. File the original data input forms and materials, including any extra copies.

11. Using the data inputs collected to date, an initial output map will be formulated under the direction of the team leader, the profile writer, and the Data Collection Coordinator. This initial output map should be retrieved from the team leader 2 or 3 days after the data distribution described in step 9.

12. Record the retrieval of the initial output map on Worksheet 18 and code it according to the project.

13. Duplicate seven copies of the initial output map.

14. Distribute copies of the initial output map to the Data Management Coordinator, the institutional representative, and each interview team member.

15. File the original and any extra copies of the initial output map.

16. List any incomplete data inputs to date and provide the team leader with this information. This will allow for its collection by the team during site visitation.

17. Immediately after the interview team has returned from its on-site visitation, retrieve from each member his uncoded interview recap forms (Forms 06, 07, 08), Job/Task Inventories (Form 03), General Position Activities Questionnaire (Form 04), interview tapes, information on interrelationships, and contextual cue items. Also, retrieve the final output map from the team leader.

18. Record on Worksheet 18 the retrieval of the data inputs from the interview team and provide these inputs with the required code numbers. Also, on the Project Personnel Coding Chart (Worksheet 05) record identification numbers for each of the interviewees.

19. Duplicate seven copies of each of the items retrieved from the interview team, excluding the interview tapes.

20. Follow up to assure complete retrieval of all data inputs, since data retrieval should be complete at this time (see Worksheets 16, 17). List any incomplete items and provide the Data Management Coordinator and the team leader with this information. (Note: As incomplete data are retrieved down the line, duplicate, distribute, and store each item as described within these procedures.)

21. Distribute to the profile writer the following data inputs as each listed item is retrieved from the site. Copies of each should be assembled and distributed to him with a list of what is enclosed.

    (a) Form 01, Worksheets 02, 03.
    (b) Form 02.
    (c) All auxiliary materials collected according to Worksheet 08.
    (d) All Form 03's.
    (e) All Form 04's.
    (f) A copy of the final output map.
    (g) All contextual cue items collected according to Worksheet 11.
    (h) All uncoded Forms 06, 07, 08.
    (i) All job descriptions.

(j) All information on project interrelationships.
(k) Any notes, charts, etc. derived by data collection agency personnel while onsite.
(l) Training Suggestion Form for each interviewee (Worksheet 13).
(m) Form 05-A.

22. Distribute to the coding resolution team the original Forms 06, 07, 08 for purposes of coding the interview data. Distribute to the data analysis section one copy of each of the items in the following list. When all the listed items are retrieved from the site, copies of each should be assembled for use in data analyses. Include a listing of the following items:

(a) Form 02.
(b) All Form 03's from the site.
(c) All Form 04's from the site.
(d) Form 05-B.

23. File all the original forms retrieved from the interview team, any other data inputs from the team, and any extra copies of these items.

24. Within one week after the interview team has returned from its site visitation, retrieve from the coding personnel the coded interview recap sheets (Forms 06, 07, 08).

25. Duplicate the coded interview recap sheets (Forms 06, 07, 08) and file these duplicates.

26. Sort the original Forms 06, 07, 08 for the data analysis section in order to reference recap statements. These recaps should be bound as a single volume, whose identification number will be the same as that used on the project's profile, and ordered as follows:

(a) Sort all sheets into the three form number sets of 06, 07, 08.
(b) Within each form number set, sort the pages in numerical order by interviewee identification number.
(c) Starting with the numeral 1, consecutively number each sheet through to n for the 06 forms. Do the same for 07 and 08 forms. Each form number set should then be numbered 1 through n.
(d) Bind these sets into a single volume with the 06 forms being placed first; then the 07 forms followed by 08 forms.
(e) The statements found on the recap forms should then be coded for computer storage in order that they may be located in the bound volumes of recap sheets by project number, form number, and page number.

27. Distribute to the data analysis section the original, coded, and bound Forms 06, 07, 08 from the site.

28. Retrieve from data analysis the reduced data.

29. Duplicate five copies.

30. Distribute copies of reduced data to team leader and profile writer.

31. File original reduced data and any extra copies.

32. Two weeks after the interview team returns from the site, retrieve the initial case-profile draft from the profile writer and duplicate eight copies.

33. Attach appropriate cover letters (see Worksheets 20, 21, 22) and distribute copies of the initial case profile to each site interview team member, the site profile writer, the project coordinators, the profile editor, and the institutional representative to the site for editing purposes as specified in each specific cover letter.

34. File the original draft and any extra copies.

35. After 2 days, retrieve profiles and comments from reviewers, compile them, and distribute to the profile writer.

36. Three weeks after the interview team returns from the site, retrieve the final profile from the profile writer and distribute one copy to the profile editor for review and necessary revision.

37. Retrieve and duplicate five copies of the editor's version of the final profile, file the original and any extra copies after mailing one copy to the site project director with directions for revision (see Worksheet 23). Provide for another coordinator's review, also.

38. When returned, compile comments from site project director and project coordinators.

39. Distribute these to editor and writer, who together finalize the profile.

40. Retrieve final version of profile from the writer.

41. Prepare the profile for printing, have it proofed in final form, printed, distributed, and filed.

Chapter 3

CASE PROFILE PREPARATION

This chapter of the methodology manual describes the writing, editing, reviewing, and distributing procedures for preparing a case profile of an educational research, development, diffusion, or evaluation project. Activity Block 19 identifies each of the major components of a profile as an output, describes the content of that component, and discusses how each of these components might be prepared. Because of the number of people involved in the preparation of a profile, Activity Blocks 20 and 21 include a discussion of the editorial and review procedures necessary for the control of the profile's content and quality. Finally, Activity Block 22 discusses procedures for printing and distributing a case profile.

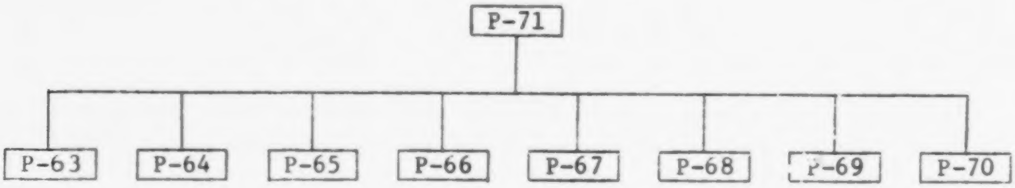
Because this chapter comprises a guide for profile writers, it has its own set of attachments serving as examples of profile components. These attachments are included within Appendix 9 of this manual.

Activity Block 19: Writing a Case Profile

Output Index:

P-63	Introductory Pages of Profile (component, production)
P-64	Profile Chapter I: Overview (component, production)
P-65	Profile Chapter II: Parameters of the Project (component, production)
P-66	Profile Chapter III: Summary of the Data (component, production)
P-67	Profile Chapter IV: Supplementary Data (component, production)
P-68	Profile Chapter V: Project Dynamics (component, production)
P-69	Profile Chapter VI: Implications for Training (component, production)
P-70	Profile Appendices (component, production)
P-71	Initial Case Profile (component, production)

Output Map:



P-63 Introductory Pages of Profile

The introductory pages consist of a title page and the table of contents. The purposes of these pages are 1) to identify the specific profile so that it can be referred to as a discrete document, 2) to identify the project (and its parent agency) which is the subject of the profile, and 3) to provide an index to the profile. These pages are of a standardized format and wording, but may be adapted as necessary to the specific profile. A sample of the title page appears as Attachment 1, and a sample of the table of contents is found as Attachment 2 of Appendix 9.

The following shows content items and sources of information for each part of the title page:

Item	Sources
1. Full title of observed project.	1. proposal, Form 02
2. Project acronym.	2. proposal, Form 01
3. Agency name and address.	3. proposal, Forms 01, 02
4. Quote displaying main thrust or philosophy of project.	4. interview tapes, proposal
5. Legal statement about sponsorship of descriptive study.	5. sample title page
6. Profile number.	6. generally in sequence in which projects were described, but not necessarily
7. Profile date.	7. date of site visitation (month and year)
8. Identification and address of agency describing the observed project.	8. sample title page

The quote displaying the main thrust or philosophy of the project (Item 4) can be selected from either the interview tapes or from the project proposal. Care should be used to select a quote which gives a brief, quick reference to what the observed project is about. A personal rather than a formal statement should be sought, or any prevailing character or philosophy reflected, which helps a reader to focus on this project as a vital process having useful outputs rather than as a set of statistics or a section in a data bank.

The table of contents should display information about the major sections of the profile, listing all subparts of interest to readers, and indicating all appropriate page numbers.

P-64 Profile Chapter I: Overview

Chapter I is an overview of the project under consideration. Since many readers will probably read only the overview, rather than the profile's entire detailed text, its intent is to serve as a complete abstract of the project. Generally not more than six pages, this chapter should maximize the reader's global perception about the project by providing a synopsis of the project, its objectives, rationale, significance, and the context in which it operates.

Each of the parts of Chapter I is shown below with its associated data source.

Item	Sources
1. Synopsis of the project	1. proposal, agency and project description from institutional representative, interview tapes, Form 02
2. Objectives, rationale, and significance of the project	2. proposal, reports of institutional representatives, interview tapes
3. Context in which the project operates	3. output map, interview tapes, project time lines, contextual map, project organizational structure chart, proposal

This section is the reader's first view of the observed project as more than a title. It must provide an understanding of the nature of the project, its goals, and its reasons for being, giving the reader a framework into which he can fit all the data contained in the rest of the profile. The data in each profile are site specific. This section must make that site comprehensible and discrete.

The "Synopsis of the Project" is a one-page summary and follows the format described in Attachment 3, Appendix 9.

The "Objectives, Rationale, and Significance of the Project" includes no more than two or three pages covering:

1. Primary goals and objectives. (main thrusts)

2. Stated philosophy or rationale for the procedures, which may include a summary of the approach/procedures.

3. Significance of the effort, particularly in light of the total program in which the project fits, or the priority needs of the sponsor/user. It should highlight the perceived value of the study.

In short, this section provides minimal elaboration of the thrust and reasoning behind the project, and concisely states the substantive information based on project documents and interview clarification. Also, it should indicate any special target group orientation for the project (e.g., special education, K-6 reading, etc.), and the nature of likely consumer groups for the outcomes of the project.

The "Context in Which the Project Operates" summarizes in about two or three pages the following:

1. Relationship to other agencies.

   Around the contextual map (see Attachment 4, Appendix 9), it identifies the major aspects of the project's:

   (a) Relationship to parent agency (and any intermediate units, including relevant supportive resources/specialists of the agency, such as a computer facility).
   (b) Relationship to funding sponsor(s).
   (c) Relationship to immediate user agency(s) (with whom coordination is required).
   (d) Relationship to subcontractor(s) (including relevant supportive resources/specialists of the subcontracting agency).
   (e) Relationship to other ongoing project(s).
   (f) Relationship to consortium members.
   (g) Relationship to advisory group(s).
   (h) Relationship to potential user(s) (groups or persons/agencies to be informed of project efforts).

2. Relationship to other efforts of an overall program.

   Identified or briefly discussed here are the project's relationship to preceding, concurrent, and/or anticipated succeeding phases of an overall larger program effort, if any, and:

   (a) Any uncertainty regarding the continuation or termination of this project.
   (b) Any uncertainty regarding the initiation of anticipated follow-on projects, implementation, or other efforts.

3. Supporting and technological resources.

   This identifies the more significant technological resources that are relevant to the project, if not covered in its "Relationship to other agencies." Included would be:

   (a) Support (or resources) provided agency.
   (b) Support (or resources) provided by user agency(s).
   (c) Support (or resources) provided by subcontractor(s).
   (d) Support (or resources) provided by other project(s).
   (e) Support (or resources) provided by consortium members.

4. Time lines.

Around a "project time lines" figure, the significant functional activities shown are discussed. Briefly identified are any major constraints, advantages, pressures, etc. Also briefly indicated is the rate of progress (or delays) up to the time of interview and those anticipated in the future. Major obstacles or factors that impede/enhance progress are cited, such as redirection of efforts as the study progresses, lack of staff or resources, morale crises, availability of prior materials for immediate use, etc.

5. Physical/environmental setting.

The more significant characteristics of the work setting including the following (as appropriate) are identified here:

(a) Necessity to carry out the work in more than one location.
(b) Geographic location.
(c) Adequacy of work setting with respect to disturbing influences.

Subsections of this chapter with their related source materials are shown below:

Item	Sources
1. Time lines (figure)	1. project time line chart, proposal, Worksheet 11
2. Relationship to agency and intermediate units	2. representative reports, interview tapes, agency documents, Forms 01, 02, 03, Worksheet 11
3. Supporting and technological resources	3. Form 03, proposal, interview tapes
4. Contextual map (agency structure chart)	4. representative reports, interview tapes, agency documents, Forms 01, 02, Worksheet 11
5. Project and/or agency management pattern	5. Forms 02 and 03, Worksheet 11
6. Interrelationships with other agencies, groups, etc.	6. Form 03, interview tapes, proposal and other project documents
7. Physical/environmental setting	7. Worksheet 11

8. Relation of project to larger program efforts (phases, etc.)	8. proposal, agency documents, interview tapes, representative reports, Forms 01, 02

P-65 Profile Chapter II: Parameters of the Project

Chapter II emphasizes the "hard" data gathered around the project's structure and the outputs it is generating. It includes the interrelationships found between outputs and between staff members. It should make these data quickly and easily available to the reader. Neither conclusions nor interpretive discussions about the effects of these data should be provided. Such information will be provided later in Chapters IV and V. Chapter II indicates what is innovative about each output, as applicable. It also describes how the project and/or output designs are unique or unusual, and presents the project staff's view of the focus of the project and its outcomes. Included here will be:

1. Project structure.

(a) Staff structure. The staffing patterns, with information about selection and structure, should be presented in both a narrative and a tabular form. Around the "Project organizational structure chart" (see Attachment 5, Appendix 9) are described the staff's various functional positions and roles. This should include the significant positions and roles of others, such as subcontract personnel, representatives or monitors from user agencies, advisors/consultants, and other participants. Described briefly are the operating interrelationships between these project groups and their functional roles. The supportive resources/specialists available within the project are also described.

"Project personnel" is defined here as including all persons working to meet the funded goals and objectives, including subcontractor personnel, advisors, and other participants; but excluding higher agency officials, except as they are directly and actively involved in the project. The figure may include current full time equivalency for each position. Briefly discussed are any staffing features that seriously affect the project, such as deviation from desired staffing and personnel turnover.

Indicated also are how the staff structure may or has changed normally over time, such as the departure of conceptualizers and designers after their aspect of the job is done, or the need for production specialists in the future phases of the project.

(b) Project roster. The primary information provided by the project roster is concerned with the type of work roles which exist on the project. Supplementary information will vary from profile to profile, reflecting for each particular staff some aspect which the writer feels is important for understanding the functioning of that particular project. Tied into the "Project roster of staff by job titles" is the staff structure description. A sample is included as Attachment 6, and incorporates full time equivalency figures.

The sample shown displays a unique feature of the subject site which the writer felt influenced how, how well, and how fast the tasks of the project were done. In this case, the majority of the staff had worked together before on a similar project. On other sites, the formal training or previous work experience may be an unusual feature of that particular staff. For example, inexperienced persons may display different behaviors in attempting to accomplish a set of goals than experienced persons would display in working toward those same goals.

This section would indicate which personnel were interviewed and identify the outputs with which each was associated in the interviews. The roster may be placed in the appendix of the profile if it gets too lengthy or disruptive in the chapter.

2. Outputs Generated

(_a_) _Index of outputs_. A descriptive list of outputs is to be generated by the interview team. A sample of such a list is included here as Attachment 7. An introductory discussion should precede the list in a form felt by the writer as helpful toward the reader's understanding of the list as it is presented. Generally, the presentation will include a brief description of each output, and an arbitrary identification number consisting of two parts: a letter which permits easy identification of the output as a product (P), condition (C), or event (E), and a sequence numeral irrespective of P, C, or E. Finally, those outputs interviewed around should be identified in some manner, e.g., by an asterisk.

Included under this heading, also, will be a table which indexes the outputs by categories. Although outputs may be categorized in many ways, those generally used will be (_a_) orientation, i.e., product, event, or condition, (_b_) focus, i.e., research, development, diffusion, or evaluation, (_c_) level, i.e., focal, component, or facilitating, and (_d_) stage of completion. An example of such a table is found as Attachment 8.

(_b_) _Output map_. A final output map will be completed by the interview team and included in the profile as a figure. An introductory discussion should precede the map describing the interrelationships and dependencies existing between the outputs displayed. An example of such a map is found as Attachment 9 in Appendix 9.

Subsections of this chapter, with their related source materials, are shown below:

Item	Sources
1. Final output map (a figure)	1. interview team leader
2. Descriptive annotated listing of outputs identified	2. Form 05, supplementary papers from site such as interim reports and relationship notes, interview tapes
3. Output categories	3. Form 05, interview tapes, supplementary papers from site
4. Staffing pattern	4.
(a) staff selection and training	(a) interview tapes, report from institutional representative, Form 03
(b) organizational structure (a figure)	(b) interview tapes, interview notes, Worksheet 11
(c) project roster of staff by job titles	(c) institutional representative reports, job descriptions, tapes, proposal

P-66 Profile Chapter III: Summary of the Data

Chapter III is a summary of specific data generated about project outputs in terms of output standards, the tasks pertaining to them, and the knowledges, skills, and sensitivities that enable their attainment. It will include tabular presentations along with discussion about data organization and interrelationships.

It should describe to the reader what the nature of the data is, how they were collected and organized, and how they are being presented. Included in this presentation are several tables showing the frequency of standards, tasks, and enablers pertaining to each output interviewed around. Described also is the system of coding sets as related to standards, tasks, and enablers; and how such categories are used to summarize the project data. The reader is referred to the listing of output standards, tasks, and enablers in the profile appendix for specific data statements. The sample size of informants on each output is indicated, as well as the trustworthiness of the obtained information. Information trustworthiness is a function of the informant's involvement with the output, his level of perspective as a function of his position within the project structure, and the length of recall or anticipation time regarding output activities.

A table of output standards cited per interviewed output is included which provides the frequency with which specific standards occurred within the production standards categories. The standards categories are related to particular outputs by means of this table and subsequent interpretive discussion. Some specific illustrations of standards coded within a category may be cited to aid the reader in understanding what a category represents.

Other relationships should be noted as appropriate, such as the relations between standards and the structures of an output. Other available data might relate the influence of project stage of completion, of time lines, or of interview background to the occurrence of standards citations by interviewees. The significance of selected standards should be pointed out and described. Important relationships of some standards to specific tasks might be stated. A display of the proportion of standards that overlap between categories of outputs would also be useful in some instances.

Included also is a process/operations standards table that provides the frequency with which specific standards occurred within the process/operations standards categories. These standards categories are related to particular outputs by means of the table and subsequent interpretive discussion. Some specific illustrations of standards coded within a category may be cited to aid the reader in understanding what a category represents. Other relationships should be noted, as cited in the section above for output standards.

The preceding tables and procedures can be used for displaying tasks, knowledges, skills, and sensitivities. These tables are not the only possible display of the data available. A variety of other standard data displays may be obtained from the computer data bank.

P-67 Profile Chapter IV: Supplementary Data

Chapter IV contains the remainder of the "hard" data on the project, consisting mainly of the summaries of questionnaire items. Some of the possible items to go into this chapter are listed below. If the data become too unwieldy, they can be placed in an appendix.

1. Output differences (by type) across the life of the project.

2. Summary of staff background.

   This would present the data from Form 03, the Job/Task Inventory. The table could be broken up into portions of inventory if not used in previous chapters, such as:

   (a) Personnel background (items 1-13)
   (b) Prior work experience (items 14-23)

   A portion of Form 02 also provides some staff data (items 14-15).

3. Summary of interviewee responses on Form 03.

   (a) Present position requirements (items 24-30)
   (b) Support resources (items 31-38)
   (c) Project management (items 39-42)

4. Summary of interviewee responses on Form 04, General Position Activities Questionnaire.

P-68 Profile Chapter V: Project Dynamics

Chapter V is a discussion of any special conditions affecting the project, the work being done, or the quality of its outputs. It principally is a chance for the writer to react somewhat subjectively to the project in terms of the interrelationships influencing its operations and results. The dynamics chapter provides an opportunity for the writer to "let loose" and tell the reader what it is like to live inside of the project. There should be no restriction in the writing of this chapter nor any particular structure in it. The reader should be provided with as much information as possible about the influences of: (This list should not be interpreted as exhausting the possibilities for discussion within this chapter.)

1. Staffing patterns
2. Management structure
3. Management styles
4. Commitments
5. Affect
6. Issues
7. Staff backgrounds
8. Agency interrelationships

Specific information on interrelationships can be gleaned from Worksheet 11 (Contextual Cue Items) and from Worksheet 14 (Interview Notes on Interrelationships) in addition to the interview tapes.

P-69 Profile Chapter VI: Implications for Training

Chapter VI summarizes what the project information relates about training needs for professionals in educational research, development, diffusion, and evaluation. It describes the way in which job definitions (or functional roles) vary across time and/or interact with each other. Specific information on training can be gleaned from Worksheet 13 (Training Suggestions Recap) and from items 22-30 on Form 03. Interviewee responses might be interpreted in light of knowledge of their background (Form 03, items 4-23). Comparisons are made between (a) Form 03 items 22-23 with items 24-25, and (b) enablers from Form 08 with items 24, 25, and 30 on Form 03. If there are any training needs that are unique to personnel working with special target groups, these should be noted as well.

P-70 Profile Appendices

A set of appendices are attached to each profile to provide supplementary data for various readers. The purpose of this section is to provide the reader with additional information which would have been out of place in the profile due to length, interest only to special audiences, etc.

Some possible appendices to the profiles appear below. This list should be altered, at the writer's discretion, to fit the needs of the profile.

A Project Roster of Staff by Job Titles (or in Chapter II)
B Outputs of the Project (annotated or in Chapter II)
C Bibliography of Available Outputs (if any)
D Sample(s) of Output(s) Produced by Project (may be annotated if used)
E Summary of Staff Background (or in Chapter V)
F Summary of Interviewee Questionnaire Responses (or in Chapter V)
G Summary of General Position Activities
H Project Proposal (edited, if used)
I Listing of Output Standards, Tasks, and Enablers
J Historical Papers of the Project

Although the profile as a whole is the responsibility of the writer, many of its components need to be generated by other agency personnel. The people responsible for various profile items are listed in Attachment 10, Appendix 9.

P-71 Initial Case Profile

The result of the preceding set of activities described for Outputs P-63 to P-70 is an initial case profile. All of the parts and pieces of a profile have been collected, organized, and presented by the writer, but the document still needs to be worked and reworked until all concerned are satisfied that it truly represents the project described in an accurate scientific and literary fashion. The activities involved in honing the initial document into a final form are subsequently described in Activity Blocks 20-22.

Activity Block 20: Editing a Case Profile

Output Index:

P-72 Edited Initial Case Profile (component, production)

Output Map:

P-72

Extensive editing of each case profile is necessary for quality control. The editing procedure described in this section interlocks with Activity Block 21 on profile reviews, since review of all aspects of the profile by persons involved with the project site and the data collection agency is as necessary to the editing process as is technical editing in providing for comprehensive quality control. This section on editing a case profile specifies procedures and personnel involved in controlling for the technical accuracy of the profile. Its intent is to provide a description of the technical editing procedure, and to describe areas of responsibility for the personnel involved in the process.

P-72 Edited Initial Case Profile

The following steps are involved in the editing process:

1. When the writer has completed an initial case profile, it is given to the Coordinator of Data Handling for duplication and distribution to the profile editor.

2. The first review by the profile editor deals with the major technical problems of the profile draft. Since profiles are written by different writers, and each writer generally follows his own style of writing, the profile editor is responsible for displaying what has been written in a proper profile format. Additionally he is responsible for spelling, grammar, etc., as well as general compatibility between profile writers. The instructions for the editor can be found in Attachment 13, Appendix 9.

3. When the editor has completed this major, technical review of the profile, he returns it to the Coordinator of Data Handling who has it retyped, duplicated, and distributed within the data collection agency for review. (This review process is described in Activity Block 21: Reviewing a Case Profile.)

4. When each person reviewing the profile in step 3 has completed his task, he returns the profile with his comments to the Coordinator of Data Handling. Upon receipt of each of these reviews, by a specified date, the Coordinator of Data Handling distributes them to the profile editor.

5. The profile editor then assists the writer in collating these review comments and writing a final version of the profile. The final version is also returned to the Coordinator of Data Handling.

6. The final version is duplicated by the Coordinator of Data Handling and sent to the site project director for review. (This process is discussed in Activity Block 21.)

7. Once the comments by the project director regarding this final version of the profile have been returned, they are given to the profile editor, who, with the help of the writer, will make any necessary revisions.

8. The profile editor then returns this final copy of the profile to the Coordinator of Data Handling for preparation as a suitable copy for printing and distribution. (This process is discussed in Activity Block 22.)

Activity Block 21: Reviewing a Case Profile

Output Index:

P-73 Reviewed Initial Case Profile (component, production)

Output Map:

P-73

As part of the process of editing each case profile there are two major reviews which provide for quality control in content, completeness, accuracy, and representativeness. The first is by staff within the data collection agency, and the second is by the director and staff of the project being profiled.

P-73 Reviewed Initial Case Profile

The following steps occur within the review process:

1. When the editor has completed his first major, technical review of the profile, he returns the profile to the Coordinator of Data Handling who has it retyped, duplicated, and distributed within the data collection agency for review (see step 3 in Activity Block 20).

   This inagency review is the responsibility of (a) all agency personnel who visited the project site for data collection purposes, i.e., data collection team members and agency representatives, and (b) the coordinators of the data collection agency. (It frequently happens that these positions overlap, e.g., a coordinator may also be a representative, or a representative may also be a team member.)

   (a) Review by data collection team. This review allows the profile to be checked for accuracy of content, interpretations, and completeness by those persons who were directly involved in the data gathering. First-hand experience at the described site will allow this group to check or correct the profile for congruence with their own perception of conditions and interactions of the profiled project and its site. The profile transmission sheet, including specific areas of review responsibility, is Attachment 11 in Appendix 9. This sheet is included with each copy of the review draft of the profile, and is to be used as a checklist of responsibilities by those persons to whom it is addressed.

   (b) Review by data collection agency coordinators. This review provides for an overview of the profile by the management personnel of the data collection agency. It includes such areas as communicability to general audiences, and adequacy of technical language for more specialized audiences. The instructions for the management review are Attachment 12 in Appendix 9.

2. After the activities in steps 4, 5, and 6 occur in Activity Block 20, the director of the profiled project and his staff review the profile. Final approval of the content and interpretations within the profile, and approval for any use of project documents, e.g., edited versions of the project proposal, sample outputs, and historical papers are sought as a result of this review.

   A cover letter (see Attachment 14, Appendix 9) will accompany the profile sent to the project director for his review. This cover letter outlines the director's review responsibilities and refers to two other documents. One is a form for rating the degree to which the profile represents the project, and the other is a profile release form permitting use of the profile as part of the output of the data-gathering effort. These two forms are found as Attachments 15 and 16, Appendix 9.

3. Upon completion of the profile review process, the next step is the same as step 7 in Activity Block 20.

Activity Block 22: Printing and Distributing a Case Profile

Output Index:

P-74 Final Case Profile (component production)

Output Map:

P-74

P-74 Final Case Profile

At this point in the preparation of a case profile, the Coordinator of Data Handling should have a final copy of the profile which has been completely reviewed and edited (see step 8 in Activity Block 20). This copy of the profile must now be prepared for printing and distribution. This may involve simply duplicating a few copies of the profile within the agency for limited distribution, or it may involve a sizable contract with a publisher for major printing and distribution. The many details that must be attended to in this process will vary depending upon the decisions that need to be made. The one major responsibility of the Coordinator of Data Handling at this point is to be sure that the profile is in the copy form needed for whatever decisions are made about printing.

Conclusion

Output Index:

C-75 The Ability to Replicate Data with the Oregon Studies Methodology (focal, production)

Output Map:

C-75

C-75 The Ability to Replicate Data with the Oregon Studies Methodology

Output C-75 does not specifically belong to Chapter 3, nor does it represent any portion of any activity block in any of the chapters in this volume. However, all three chapters are designed so that replication of the outputs and processes described will result in the user being able to generate additional data compatible with the data generated by the Oregon Studies. This is as indicated in the output map to the volume, the focal output of the volume.

EPILOGUE

The methodology described in the first three chapters of this volume was conceptualized and built to provide descriptive information about educational research, development, diffusion, and evaluation projects. A number of variables were devised and a means of collecting data about the variables described and operationalized. A vast amount of data was collected and procedures for its automated storage and retrieval designed and implemented. The methodology continued to evolve during the course of the project and was in fact being modified as this volume was being written.

The reader might ask, after having read the first three chapters of this methodology manual, what utility such a procedure might have within the context of his own project or organization. The response to that question is as complex as was the development of this methodology. The procedures as described in the preceding three chapters, when implemented according to the specifications presented in those chapters, provides for the user a means of *describing* a directed set of activities in terms of the major variables, i.e., outputs, tasks, enablers and standards. This descriptive application of the methodological procedures provides no value judgments about the data collected, although the summarized data will surely be assessed by the user once they have been collected.

By focusing upon the output, the methodology is essentially asking the question "what is it that you wish to accomplish?" It does not provide the *means* for achieving the output, by way of defining the exact nature of the *process* necessary for successful production of the output, nor does it specify or delineate the variety of technologies already in existence within the professional educator's "bag of tricks", e.g., PERT, PPBS, behavioral objectives, etc. Instead the methodology provides the user with a systematic means of defining the exact nature of the *actual* outputs, tasks, enablers, and standards. Once such an exact description of "what is" is produced, the user can determine if there is need for the invocation of specific problem-solving strategies.

Based upon some value judgments which were made after visiting 20 exemplary sites, a tentative hypothesis can be advanced: If an organization, group, etc. is to succeed in the production of some output in a most cost effective and efficient manner, with the highest degree of professional involvement and behavior, then it is critical for *all* staff members to know, and share in operational terms, the common direction or goal; understanding not only his own contribution to the realization of that goal but the contribution of the staff members who compose the organization, project, etc. Even though no attempt was made to evaluate the individual sites which were visited, it was clearly the case that there were differences not only in the types of outputs produced (this is discussed thoroughly in Volume I), but in the manner in which the personnel on those sites approached the tasks at hand. After all, it is people who create outputs. While the outputs may be well done, there was and is a difference of attitude in people's approach to the task of producing the outputs they are charged with.

Obviously, describing a problem will not provide commitment or direction on the part of a staff. The definition of the activities from the viewpoint of all staff involved and the perspective gained through the reduction of the forthcoming data, however, provides a means for a staff to examine themselves and decide for themselves if there is a problem in existence, and quite possibly the appropriate steps to take to alleviate the problem circumstance. This is in contrast to systems analysis methodologies which frequently produce descriptions of problem states using any number of variables, but from the point of view of a third party. While this has been believed to be a desirable procedure, it would appear from our experience that a staff engaged in a set of focused activities gain much more if they are the ones doing the describing, receiving a helping hand in asking the question of themselves, summarizing their thoughts, and discussing problems which may have been discovered. Once this has been done as a staff, discussing alternative problem solution strategies can take on the power and the support of a total group. This in contrast to the "legislating of PPBS," as an example.

This is not to say that descriptions such as those presented in Volume IV necessarily lead to action. The implementation of alternative strategies which will alleviate any problem circumstances which may be discovered is still up to the users of these procedures.

In short, the methodology as a descriptive tool can provide an organization, group of individuals, etc. with a thorough and complete description of what is actually being done in relation to the execution of a directed set of activities through the identification of the actions and outputs, etc. Utilizing this methodology also provides the opportunity to visualize a set of activities from the point of view of the individuals actually engaged in them. Conversely it provides the individuals engaged in the work activities with a description of themselves. These procedures summarize and organize the data provided by the individuals producing the outputs. This is of significance not only from the standpoint of accuracy of description, but also from the point of view that it helps clarify the contribution of every staff member to the directed set of activities, not only abstractly, but for each individual (a precondition to commitment?). This methodology can provide a project or agency director a means of having individuals come to realize what their contribution to an overall goal or objective actually is. It can provide the vehicle for the identification of problem states. These descriptive attributes of the methodology allow the user to paint a picture, frozen in time or dynamic through time, and on the basis of that picture diagnose immediate or potential trouble spots.

The methodology, then, can provide an accurate description. A description of people doing something, engaging in behaviors which may or may not be directed toward a desirable outcome.

In short, the Oregon Studies have provided the opportunity to think about in the conceptual sense, expand in the physical sense, and utilize in a time-dependent sense a methodology within a number of different and diverse settings. This version of the methodology would appear to be one of the most significant outputs of these Oregon Studies.

GLOSSARY

ADOPTION	1. the taking of and using as one's own. 2. in present usage, refers to the acceptance for use of KNOWLEDGE, INFORMATION, and/or TECHNOLOGY.
CLUSTER	1. a number of different things grouped together on the basis of more general qualities shared among them. 2. in present usage, refers to a basis for grouping and classifying large numbers of specific OUTPUTS and TASKS, such groupings referred to as cluster categories.
CHARACTER	1. the distinctive kind or sort that a thing is. 2. in present usage, refers to a classification given an OUTPUT that is distinguishable as an instance of KNOWLEDGE, TECHNOLOGY, IMPLEMENTATION, or INFORMATION.
COMPONENT	1. a part or integral ingredient in a whole. 2. in present usage, a classification given an OUTPUT having such relationship to a FOCAL OUTPUT. See FOCAL and FACILITATING.
CONDITION	1. manner, circumstance, or state of being. 2. in present usage, a STRUCTURE classification given an OUTPUT which represents an instance of a desired circumstance expected to endure within the life of a PROJECT, or beyond the PROJECT as a result of it.
CONTEXT	1. the situation, background, and environment within which a specified set of focused activities occurs. 2. in present usage, "focused activities" refers to PROJECT, and "situation... environment" to its FOCUS, SETTING, SIZE, CONTENT.
DEVELOPMENT	1. a working out in detail or expansion of (a technique). 2. in present usage, refers to: (a) engaging in a problem-solving strategy designed to produce reliable TECHNOLOGY, that is, procedures, materials, hardware, and organizational frameworks that have a known degree of success in bringing about a particular outcome or in performing a defined OPERATION; (b) a FOCUS classification given a PROJECT.
DIFFUSION	1. the conveying of something from one person, place, or situation to another. 2. in present usage, refers to: (a) a problem-solving strategy designed to bring about the IMPLEMENTATION of generalizable KNOWLEDGE, a reliable TECHNOLOGY, or trustworthy INFORMATION (as used here diffusion incorporates the concepts of DISSEMINATION, ADOPTION, and UTILIZATION); (b) a FOCUS classification given a PROJECT.
DISSEMINATION	1. scattering far and wide. 2. in present usage, refers to the distribution of KNOWLEDGE, INFORMATION, and/or TECHNOLOGY to a targeted population.

EDUCATIONAL RDD&E	a coordinated set of problem-solving strategies designed to produce OUTPUTS that can be judged as to their quality and their contribution to the solution of educational problems.
ENABLER	1. that which makes able, provides with means, power or authority. 2. in present usage, it refers to those KNOWLEDGES, SKILLS, and SENSITIVITIES needed to produce a particular OUTPUT.
EVALUATION	1. finding the values or amounts of (a phenomenon). 2. in present usage, refers to: (a) engaging in a problem-solving strategy designed to produce trustworthy INFORMATION regarding a phenomenon which occurs in a context or environment over which the user expects to exercise influence or about which he expects to make decisions; (b) a FOCUS classification given a PROJECT.
EVENT	1. happening or occurrence. 2. a STRUCTURE classification given an OUTPUT which represents an instance of occurrence of an observable transaction or set of behaviors.
FACILITATING	1. making easier or assisting the performance or accomplishment of. 2. in present usage, a classification given an OUTPUT having such relationship to and which is not an instance of a COMPONENT or FOCAL OUTPUT. See COMPONENT and FOCAL.
FOCAL	1. of or pertaining to the center of activity or attention as a matter of contractual (implied or otherwise) obligation. 2. in present usage, a classification given an OUTPUT having such relationship to the outcomes of the efforts of a PROJECT. See COMPONENT and FACILITATING.
FOCUS	1. concentration: as, a focus on a kind of strategy. 2. in present usage, refers to a classification given a PROJECT having as the primary concentration of problem-solving work effort a strategy characteristic of either RESEARCH, DEVELOPMENT, DIFFUSION, or EVALUATION.
FUNCTION	1. a special duty or service rendered by a person or thing in the course of work or activity. 2. in present usage, refers only to a classification given an OUTPUT in accordance with the POLICY (setting), MANAGEMENT, or PRODUCTION service it renders to the course of PROJECT work.
IMPLEMENTATION	1. the carrying into effect and using of. 2. in present usage: (a) a CHARACTER classification given an OUTPUT which represents an instance of the ADOPTION and UTILIZATION of KNOWLEDGE, TECHNOLOGY, and/or INFORMATION; hence, (b) an OUTPUT of DIFFUSION.
INDEX	1. a list describing the items of a collection. 2. presently used in relation to an OUTPUT index, a listing of the OUTPUTS of a PROJECT.

INFORMATION	1. trustworthy facts or data descriptive of something without reference to interpretive or value judgments relating to that description. 2. in present usage: (a) a CHARACTER classification given an OUTPUT which represents an instance of such facts or data; hence, (b) an OUTPUT of EVALUATION.
KNOWLEDGE	1. empirically verifiable ideas inferred from facts or data which add to that which is known. 2. in present usage: (a) a STRUCTURE classification given an ENABLER which represents an instance of that which is to be known as a requisite to accomplishment of an OUTPUT; (b) a CHARACTER classification given an OUTPUT which represents an instance of such newly inferred and generalizable ideas; hence, (c) an OUTPUT of RESEARCH.
LEVEL	1. a position within a dependent structure. 2. in present usage, *level* refers to one of three positions in the dependent ordering of OUTPUTS, i.e., FOCAL, COMPONENT, FACILITATING.
MANAGEMENT	1. the act or art of handling, orchestrating, and directing. 2. in present usage, a FUNCTION classification given an OUTPUT which orchestrates the resources (time, personnel, materials, space, INFORMATION) available to a PROJECT in the realization of outcomes expected from it, or is a report of that orchestration.
MAP	1. a drawing or other representation of the relationships of. 2. in present usage, (a) a schematic ordering of the OUTPUTS of a PROJECT in accordance with their interdependent relationships (OUTPUT *map*); (b) a schematic ordering of the organizational structures which exist within the CONTEXT of a PROJECT (Contextual *map*).
OPERATIONS	1. any movement or series of movements made in fulfilling a purpose. 2. in present usage, refers to movements within a PROJECT in terms of the TASKS performed in the generation of the OUTPUTS for which the PROJECT is responsible.
OUTPUT	1. something manufactured, created, or produced. 2. in present usage, refers to: (a) an identifiable outcome of targeted work activity which contributes to the realization of PROJECT goals; (b) a STRUCTURE classification given STANDARDS which serve as criteria for judging the adequacy of an outcome of targeted work activity.
POLICY	1. any governing principle or guideline for a course of action. 2. in present usage, a FUNCTION classification given an OUTPUT which establishes the principles or guidelines to be attended by a PROJECT, such classification frequently referred to as *policy* setting.
PRIMARY	1. fundamental, elemental. 2. in present usage, refers to an initial categorization of interview data in which the category retains the fundamental and essential elements of each specific datum; hence, *primary* categories of OUTPUTS and TASKS.

PROCESS	1. a continuing procedure generally composed of many steps and/or involving many changes. 2. in present usage, a term combined with the term OPERATIONS as a STRUCTURE classification given STANDARDS which serve as criteria for judging the adequacy of procedures associated with specified OUTPUTS.
PRODUCT	1. something tangible or "hard" produced as an outcome of work effort. 2. in present usage, a STRUCTURE classification given an OUTPUT which represents an instance of a tangible outcome, concrete in form, and transportable at a given point in time.
PRODUCTION	1. the act of fabricating or creating. 2. in present usage, a FUNCTION classification given those OUTPUTS which build directly on the fabrication objectives of a PROJECT.
PROJECT	a formally recognized, funded and directed effort aimed at achieving one or more specified ends that have their definition in educational RESEARCH, DEVELOPMENT, DIFFUSION, and EVALUATION.
RESEARCH	1. studious inquiry, examination, investigation, or experimentation aimed at the generation of KNOWLEDGE. 2. in present usage, refers to: (a) engaging in a problem-solving strategy designed to produce ideas, principles, theories, and laws that can be shown to be generalizable through empirical verification; (b) a FOCUS classification given a PROJECT.
SENSITIVITY	1. a quality of having perceptiveness and responsiveness. 2. in present usage, a STRUCTURE classification given an ENABLER which represents an instance of a specific perceptiveness and responsiveness considered requisite to accomplishment of an OUTPUT.
SETTING	1. environment, background, or surroundings of a place. 2. in present usage, setting refers to a classification given a PROJECT residing essentially in a college or university, R&D agency, private firm, or public school environment.
SIZE	1. extent, scope, or magnitude of a thing. 2. in present usage, refers to the current fiscal year funding and number of professional staff of a PROJECT, taken independently and in combination.
SKILL	1. ability, proficiency, or expertness in accomplishing something. 2. in present usage, a STRUCTURE classification given an ENABLER which represents an instance of a specific ability considered requisite to accomplishment of an OUTPUT.
STANDARD	1. a grade of excellence or attainment regarded to be a measure of the adequacy of something. 2. in present usage, a specific criterion applied to, excellence expected of, or a criterion by which judgments of adequacy are made about OUTPUTS and PROCESS/OPERATIONS.

STRUCTURE 1. an orderly arrangement of the parts of a whole. 2. in present usage, refers to the constructs which identify the parts of each of several wholes, as in structure of OUTPUTS (PRODUCTS, EVENTS, CONDITIONS), structure of STANDARDS (OUTPUT, PROCESS/OPERATIONS), structure of ENABLERS (KNOWLEDGES, SKILLS, SENSITIVITIES).

TASK 1. any discrete piece or unit of work. 2. in present usage, a discrete unit of work performed among other similarly targeted units in producing or achieving a specific OUTPUT to the STANDARDS set for it.

TECHNOLOGY 1. a technical method of or framework for achieving a practical purpose. 2. in present usage: (a) a CHARACTER classification given an OUTPUT which represents an instance of a reliable strategy, procedure, hardware, or set of materials designed to bring about a particular outcome or to perform a defined OPERATION; hence, (b) an OUTPUT of DEVELOPMENT.

UTILIZATION 1. the making use of. 2. in present usage, refers to the making use of KNOWLEDGE, TECHNOLOGY, and/or INFORMATION.

APPENDICES

APPENDIX 1

Forms and Worksheets

Forms

F01	Project Contact Record
F02	Project Questionnaire
F03	Job/Task Inventory
F04	General Position Activities Questionnaire
F05 (A+B)	Output Recap
F06	Standards Recap
F07	Task Recap
F08	KSS Recap

Worksheets

W01	Project Selection Form
W02	Project Information from Project Officer
W03	Project Selection Data
W04	Project Identification Coding
W05	Project Personnel Coding Chart
W06	Data-collection Personnel Coding Chart
W07	Travel Information
W08	Dissemination Brochure
W09	Output Interview
W11	Contextual Cue Items
W12	Interview Record Form
W13	Training Suggestions Recap
W14	Interviewer Notes on Interrelationships
W16	Checklist of Interviewee Data Inputs
W17	Checklist of Project Data Inputs
W18	Chart of Project Information Status
W20	Profile Transmittal Sheet (Team)
W21	Profile Transmittal Sheet (Coordinators)
W22	Profile Transmittal Sheet (Editor)
W23	Profile Transmittal Sheet (Project Director)

APPENDIX 1 Form 01

Forms and Worksheets

PROJECT CONTACT RECORD

PRIME CONTRACTOR Project # ☐☐☐

1. Project Acronym: ____________________

2. Project Director: ____________________

   Position Title: ____________________

   Address: ____________________

   ____

   Telephone: ____________

   Other Project Contact: ____________________

3. Contracting Agency: ____________________

   Agency Director and Title: ____________________

   Address: ____________________

   ____

   Telephone: ____________

4. Sponsoring/ Funding Agency: ____________________

   Agency Department: ____________________

   Address; ____________________

   ____

   Project Officer: ____________________

   Position: ____________________

   Telephone: ____________

5. Other contact and/or protocol linkages, particulary for purposes of providing any required clearances:

   ____

   ____

   ____

APPENDIX 1 (cont'd)

F01-2

SUBCONTRACTOR
(include others involved in project such as demonstration sites, user agencies, coordinating projects, etc.)

Project # ☐☐☐

1. Project Acronym: ____________________

2. Project Director: ____________________

   Position Title: ____________________

   Address: ____________________

   ____

   Telephone: ____________

3. Subcontracting Agency: ____________________

   Agency Director and Title: ____________________

   Address: ____________________

   ____

   Telephone: ____________

4. Other contacts and/or protocol linkages, particularly for purpose of providing any required clearances:

   ____

   ____

   ____

   ____

   ____

   ____

APPENDIX 1 (cont'd)

F01-3

COMMUNICATIONS LOG

Project # ☐☐☐

Project Acronym or other identifier:

Date of Contact:

Contact Was Initiated By:

Person Contacted Was:

Purpose of Contact:

Comments:

NOTE: This form should be completed each time a contact is made with a project, contractor, sponsor, subcontractor, or other project-related person. forward it immediately to the coordinator of New Data Inputs for filing.

APPENDIX 1 (cont'd)

Form 02

Project # ☐☐☐

PROJECT QUESTIONNAIRE

This questionnaire was developed by Teaching Research, a division of the Oregon State Systems of Higher Education, pursuant to a grant from the U. S. Office of Education.

APPENDIX 1 (cont'd)

F02
Project # ☐☐

PROJECT QUESTIONNAIRE

INSTRUCTIONS: Check the Box ☑ opposite each item that applies to the project, or write in the data required.

1. Director's Name

2. Official Project Title

3. Primary Project Objective

4. Month and Year of Data Collection ____________________

5. Starting Date of Project ____________________

6. Ending Date of Project ____________________

7. Total Duration of the Project
- ☐ 1 - 7 months
- ☐ 8 - 11 months
- ☐ 12 months
- ☐ 13 - 15 months
- ☐ 16 - 23 months
- ☐ 24 - 29 months
- ☐ 30 - 36 months
- ☐ 37 months or more

8. Type of Contracting Organization in Which the Project Resides
- ☐ Education Research and Development Center
- ☐ Regional Educational Laboratory
- ☐ College, School of Education, Psychology Dept., or other university office or agency
- ☐ Private Non-Profit Organization
- ☐ Industry or Commercial Organization
- ☐ Public School or School District
- ☐ State Department of Education
- ☐ Professional Association
- ☐ Agency of the Federal Government (specify department) ____________________
- ☐ Other (specify) ____________________

9. Project funding from all sources

a. Total	b. Current Fiscal Year	c. Last Year	
☐	☐	☐	No funding
☐	☐	☐	$20,000 or less
☐	☐	☐	$20,001 - $100,000
☐	☐	☐	$100,001 - $225,000
☐	☐	☐	$225,001 - $500,000
☐	☐	☐	More than $500,000

10. Sources of Total Project Funds

	Approximate Percent of Funds from Each Source
a. ☐ US Office of Education	i. __________
b. ☐ Other federal agency (specify) ____________________	j. __________
c. ☐ State (specify) ____________________	k. __________
d. ☐ Private foundation	l. __________
e. ☐ Local school district	m. __________
f. ☐ College or university	n. __________
g. ☐ Industry	o. __________
h. ☐ Other (specify) ____________________	p. __________

11. Primary Source of Funds

12. Number of Funding Sources

13. Percent of total project expenditure for each fiscal year of project

a. Current year ________% b. Last year ________% c. Next year ________%

14. What is the total number of personnel who regularly receive all or part of their salary (or other financial stipend) from the project:

	Currently	Current Fiscal Year	Last Year	Anticipated Next Year
Professional Staff (including management)	a.______	f.______	k.______	p.______
Clerical support staff	b.______	g.______	l.______	q.______
Technical support staff	c.______	h.______	m.______	r.______
Sub-contractor professionals	d.______	i.______	n.______	s.______
Other significant personnel (consultants, advisors, etc.)	e.______	j.______	o.______	t.______

15. List the numbers of various academic degree levels of your total current project staff. (Do not include consultants and sub-contractors.)

	Professional Staff	Support Staff
Doctorate	a.__________	h.__________
Specialist or Professional	b.__________	i.__________
Masters	c.__________	j.__________
Bachelors	d.__________	k.__________
Associate	e.__________	l.__________
Technical License	f.__________	m.__________
Other (specify) __________	g.__________	n.__________
	(this column should equal the number cited in item 14.a above)	(this column should equal the number cited in 14 b & c above)

16. Enter complete bibliographic information on each published report or substantive document of the project. (Continue on reverse side as necessary.)

APPENDIX 1 (cont'd)

Form 03
Project # ☐☐☐
Personnel # ☐☐

JOB/TASK INVENTORY

Instructions

The purpose of this inventory is to gather information about the actual backgrounds and opinions of professional persons who perform educational Research, Development, Diffusion and Evaluation activities. This inventory has the sanction of your organization and project directors.

Please respond as candidly as possible. Your responses will be kept confidential and the compilations made from these inventories will be reported only in statistical form.

There are no right or wrong responses and no preferred pattern of responses.

Mark your responses and comments clearly and legibly and make any supplementary notations regarding pertinent information in the margins or the writing spaces provided for "other" responses.

Thank you.

This questionnaire was developed by
Teaching Research, a division of the Oregon
State System of Higher Education, pursuant
to a grant from the U.S. Office of Education.

APPENDIX 1 (cont'd)

F03
Project # ☐☐☐
Person # ☐☐☐
FTE ☐☐☐

JOB/TASK INVENTORY

PERSONNEL BACKGROUND SECTION

INSTRUCTIONS: Check the Box ☑ opposite each item that applies to you, or write in the data required.

1. Last Name -- First Name -- Middle Initial

2. Short title or acronym for project

3. Your official title on this project

4. Your functional job title, most descriptive of your work role on this project

5. Sex

☐ Male ☐ Female

6. Age

- ☐ Under 20
- ☐ 20-24
- ☐ 25-29
- ☐ 30-34
- ☐ 35-39
- ☐ 40-44
- ☐ 45-49
- ☐ 50-54
- ☐ Over 54

7. Highest Degree you hold

- ☐ Doctorate or Post-D
- ☐ Specialist or Professional
- ☐ Masters
- ☐ Bachelors
- ☐ Associate
- ☐ Technical License
- ☐ None of these
- ☐ (Specify other:______ ____________________)

8. Professional certification or licensing

Type: ____________________

Issuing Agency: ____________________

9. Number of professional publications authored

☐ None ☐ 1-3 ☐ 4-8

☐ 9-15 ☐ 16+

10. Major area of specialty for highest degree

- a. ☐ Education/Teaching
- b. ☐ Education Administration
- c. ☐ Educational Research
- d. ☐ Guidance/Counseling
- e. ☐ Vocational Training
- f. ☐ Statistics/Measurement
- g. ☐ Psychology
- h. ☐ Engineering
- i. ☐ Computer Sciences
- j. ☐ English/Writing
- k. ☐ Business Administration
- l. ☐ Other: ____________________

11. Minor areas of speciality for college study

- a. ☐ Education/Teaching
- b. ☐ Education Administration
- c. ☐ Educational Research
- d. ☐ Guidance/Counseling
- e. ☐ Vocational Training
- f. ☐ Statistics/Measurement
- g. ☐ Psychology
- h. ☐ Engineering
- i. ☐ Computer Sciences
- j. ☐ English/Writing
- k. ☐ Business Administration
- l. ☐ Other: ____________________

12. Your annual salary

- ☐ Under $5,000
- ☐ $5,000-$8,999
- ☐ $9,000-$11,999
- ☐ $12,000-$16,999
- ☐ $17,000-$21,999
- ☐ $22,000-$29,000
- ☐ Over $29,000

13. National Professional Memberships

- a. ☐ AERA (American Educational Research Association)
- b. ☐ NEA (National Education Association)
- c. ☐ AVA (American Vocational Association)
- d. ☐ APGA (American Personnel and Guidance Association)
- e. ☐ APA (American Psychological Association)
- f. ☐ AECT (Association of Educational & Communications Technology)
- g. ☐ Other: ____________________

PRIOR WORK EXPERIENCE

Items 14 to 23 refer to your work experience prior to your present assignment on this project.

14. Number of years of experience in each of the following:

a. ______ Teaching in a college or university
b. ______ Conducting research in a college or university
c. ______ Working in public schools
d. ______ Working for state or national educational agencies
e. ______ Working in educational R & D centers
f. ______ Working in present organization (may overlap with above)
g. ______ Other educational or research employment: ______________________________

____

15. Describe briefly what you did in each of the applicable employment areas noted in item 14. Indicate all of your work experience of the last 10 years, or after age 20.

a-g Area	Years Worked	Descriptive Job Title	Type of Work

16. Total number of years of experience in educational research, development, evaluation, and/or diffusion (not including teaching): __________

17. Total number of years of managerial experience in directing educational research, development, evaluation, and/or diffusion projects? __________

18. On how many educational research, development, diffusion, or evaluation projects have you been Principal Investigator? __________

19. How many proposals for projects have you written or helped prepare, and submitted for funding consideration? __________

20. How many educational research, development, diffusion, and evaluation projects have you worked on? __________

21. How many funded projects are you now working on? __________

22. What, in your professional training, was most relevant to providing you with the knowledges and skills necessary for the performance of your duties on this project? (That is, what specific courses, research, thesis, apprenticeship, etc.)

23. What, in your past professional work experience, was most relevant for your preparation on this project?

PRESENT POSITION REQUIREMENTS

From the benefit of your experience and your perception of your work within this project, please respond to the following items from an idealized point of view. Consider the requirements of your position as if you were hiring someone to fill that position.

24. What specialized training should be required? What particular areas of training?

25. What specific knowledges and skills does the position require? (Describe as fully as possible.)

26. How many years of work experience does the position require in educational research, development, diffusion, and/or evaluation? ________

27. How many years of work experience does the position require in administration activities? ________

28. How many years of work experience does the position require in management activities? ________

29. What level of academic training does this require?

☐ Doctorate
☐ Specialist or Professional
☐ Masters
☐ Bachelor
☐ Associate
☐ Technical License
☐ None of these
(Specify if other: ________)

30. What in-service training have you undergone on this project to prepare you specifically for your current assignment? (For example, informal briefing, workshops, specific formal courses, etc.)

SUPPORT RESOURCES

31. Please check ☑ all support services from the list below, provided by other persons or agencies, that you must have to carry out your job on this project.

a. ☐ Equipment construction (mechanical, electronic, carpentry, etc.)
b. ☐ Printing
c. ☐ Other reproduction services: ____________________
d. ☐ Photography
e. ☐ Art work and illustrations
f. ☐ Drafting
g. ☐ Technical writing
h. ☐ Editing
i. ☐ Secretarial service, other than typing
j. ☐ Typing
k. ☐ Purchase of supplies and equipment
l. ☐ Library holdings
m. ☐ Subscriptions to technical and professional journals/periodicals
n. ☐ Requests for documents or publications not locally available
o. ☐ Computer analysis services (Data processing)
p. ☐ Computer program writing
q. ☐ Statistical consultation
r. ☐ Audio-visual aids and devices
s. ☐ Subjects for experimentation or try-out of procedures
t. ☐ Travel arrangements
u. ☐ Budgetary and other fiscal accounting
v. ☐ Scoring of test items
w. ☐ Television facilities and equipment
x. ☐ Other: ____________________
y. ☐ ____________________
z. ☐ ____________________

32. Please check ☑ all the support equipment listed below that are immediately available and used by you in this project.

a. ☐ Dictating equipment
b. ☐ Desk calculators
c. ☐ Desk-top computer
d. ☐ Remote computer terminal
e. ☐ On-site computer
f. ☐ Key-punch machine
g. ☐ Data card sorter
h. ☐ Photographic equipment
i. ☐ Video tape
j. ☐ Television camera
k. ☐ Readers for microfiche or microfilm
l. ☐ Other significant equipment: ____________________
m. ☐ ____________________
n. ☐ ____________________

33. What amount of travel is expected of you on this project?

a. Number of trips per year
- ☐ None
- ☐ 1-2
- ☐ 3-5
- ☐ 6-10
- ☐ 11-15
- ☐ 16-25
- ☐ More than 25

b. Average duration of each trip
- ☐ No trips involved
- ☐ Less than 1 full day
- ☐ 1 day each trip
- ☐ 2 days
- ☐ 3 days
- ☐ 4-5 days
- ☐ 6-8 days
- ☐ 9-15 days
- ☐ More than 15 days

34. To what extent are project manpower resources (number and capabilities) adequate?
- ☐ Reasonably adequate
- ☐ A bit tight
- ☐ Extremely short

35. To what extent are project time lines and available period of performance adequate?
- ☐ Reasonably adequate
- ☐ A bit tight
- ☐ Extremely short

36. To what extent are project financial resources adequate?
- ☐ Reasonably adequate
- ☐ A bit tight
- ☐ Extremely short

37. Is some reasonable amount of project time made available to project personnel for each of the following?

	Yes	No	
a.	☐	☐	Preparation of professional papers for publication
b.	☐	☐	Presentation of speeches at conventions or other professional meetings
c.	☐	☐	Attendance at conventions or other professional meetings
d.	☐	☐	Personal reading of current professional literature
e.	☐	☐	Reading of professional literature relevant to this project
f.	☐	☐	Preparation of proposals for possible funding of future projects
g.	☐	☐	Establishment and maintenance of contacts with other agencies, potential sponsors, etc.
h.	☐	☐	Interaction with personnel on other projects within your own organization

38. Does your project or agency expect you to engage in the following?

	Yes	No	
a.	☐	☐	Preparation of professional papers for publication
b.	☐	☐	Presentation of speeches at conventions or other professional meetings
c.	☐	☐	Attendance at conventions or other professional meetings
d.	☐	☐	Personal reading of current professional literature
e.	☐	☐	Reading of professional literature relevant to this project
f.	☐	☐	Preparation of proposals for possible funding of future projects
g.	☐	☐	Establishment and maintenance of contacts with other agencies, potential sponsors, etc.
h.	☐	☐	Interaction with personnel on other projects within your own organization

PROJECT MANAGEMENT

39. Check all of the following which are usually provided to you by the project leader and/or his key subordinates? (Project directors should answer these items from the viewpoint of how they provide project guidance.)

	Yes	No	
a.	☐	☐	Detailed project time lines.
b.	☐	☐	Specific forecasting of project efforts, and associated monitoring and accounting (such as by a PERT system).
c.	☐	☐	Specified work assignments on a daily-to-weekly basis.
d.	☐	☐	General statements of functional goals, to serve as a basis for individual work assignments or responsibilities.
e.	☐	☐	Occasional reviews of effort, and general discussion of remaining work goals.
f.	☐	☐	Frequent review of work achievement.
g.	☐	☐	Weekly or bi-weekly staff meetings to review project progress.
h.	☐	☐	Annual or semi-annual review of individual performance and effectiveness.
i.	☐	☐	Close daily working contact.
j.	☐	☐	Other means by which you know what you should be doing on the project and how well it is being done: ______

40. Project structure as viewed by project personnel:

☐ Pyramid (based on span of control and delegation of responsibilities, without much staff support from parent agency)
☐ Corporate structure (with many supporting staffs and resources of the parent agency)
☐ Inverted pyramid (few workers, but many advisors, consultants, and/or evaluators)
☐ Chain of command (vertical linearity, with many levels of command)
☐ Leaderless (cooperative work team, with general reporting to parent agency)
☐ Other: ______

41. To what extent is coordination required within this project?

☐ 1-Very minimal coordination
☐ 2-
☐ 3-
☐ 4-Moderate amounts of coordination
☐ 5-
☐ 6-
☐ 7-Very extensive and involved coordination

42. To what extent does this project require coordination with other agencies (schools, sponsor, sub-contractors, consortium members, related projects, etc.)?

☐ 1-Very minimal coordination
☐ 2-
☐ 3-
☐ 4-Moderate amounts of coordination
☐ 5-
☐ 6-
☐ 7-Very extensive and involved coordination

PROJECT WORK ASSIGNMENTS

43. If you are now working on other funded projects, in addition to this project, what functional job titles are most descriptive of your work role on each of the other projects? Indicate all current job roles you perform within the agency, and the position titles.

44. How many persons do you supervise directly?

a. Currently, on all projects:______ c. Normally, on all projects:______

b. Currently, on only this project:______ d. Normally, on this project: ______

45. How many persons work under your general supervision, though not necessarily under your direct supervision?

a. Currently, on all projects:______

b. Currently, on only this project:______

46. What is your relationship to the primary contractual project?

☐ Regularly a part of the prime project staff.

☐ An on-call member of the prime agency, performing on the project as needed.

☐ Regularly a part of a sub-contractor's project staff concerned with this project.

☐ An on-call member of a sub-contractor's agency, performing on the project as needed.

☐ An advisor or consultant, not considered part of the regular project staff.

☐ A manager or specialist within the agency, concerned with similar matters across several projects of the agency.

☐ A member of an agency or unit that is participating in or cooperating with portions of this project.

☐ A member of an agency or institution that will be a principal user of this project's efforts or products.

☐ Other: ________________________________

47. Project role: ☐ (do not fill in; for ADP use only)

Form 04

Project #			
Person #			

GENERAL POSITION ACTIVITIES QUESTIONNAIRE

Name of Respondent: ____________________________________

INSTRUCTIONS:

Consider each of the following statements which may describe or characterize something that you do in your work on this project. As you consider each item, you are to proceed in two steps:

First, consider whether the activity applies to your work. If the answer is NO, then it is definitely not a part of your job on the project (as when it is delegated by you to a subordinate worker).

Second, and only if the activity does apply for your work, you must then decide how significant a part of your work it represents. In making this decision you are to consider and weigh its importance, frequency of occurrence, relevance, or any other factor which you think determines to what extent the activity contributes to your work.

You are to allot a value between 0 and 7 to each item according to the following scale:

0. Definitely not a part of my project activity, does not apply.
1. Under unusual circumstances may be a minor part of my work.
2.
3.
4. A substantial part of my work.
5.
6.
7. A most significant part of my work.

Thank you for your time and care in completing this form.

This questionnaire was developed by Teaching Research, a division of the Oregon State System of Higher Education, pursuant to a grant from the U.S. Office of Education.

Enter a number between 0 and 7 in the blank before each statement, for general categories and for more specific activities.

Please do not omit any listed items.
ANSWER EVERY ITEM.

General Categories of Work:

_____ A. Reading.

_____ B. Designing or planning procedural activities for the project.

_____ C. Developing research tools or other information-gathering instruments.

_____ D. Collecting project data.

_____ E. Analyzing data.

_____ F. Writing.

_____ G. Supervising and coordinating actions of others, and/or of material resources.

_____ H. Teaching or training.

_____ I. Meeting, consulting, or advising.

_____ J. Other general category of work. (specify) ____________________

____

____

_____ K. Other general category of work. (specify) ____________________

____

____

Specific Categories of Work:

A. Reading.

_____ 1. Reading recent project-related research.

_____ 2. Reading scholarly essays.

_____ 3. Reading methodological documents presenting information regarding methods of inquiry and/or analysis.

_____ 4. Reading "in-house" materials and correspondence.

_____ 5. Other reading: ____

____

B. Designing or planning procedural activities for the project.

_____ 1. Identifying relevant variables for consideration.

_____ 2. Developing conceptual frameworks or general patterns of project design.

_____ 3. Developing methodologies to be used in the project.

_____ 4. Organizing a coherent program of activities.

_____ 5. Designating sampling procedures.

_____ 6. Designating general statistical treatment to be used.

_____ 7. Designing system models for computer application to data.

_____ 8. Other designing: ______________________________

____

C. Developing research tools or other information-gathering instruments.

_____ 1. Constructing questionnaires.

_____ 2. Developing test items.

_____ 3. Developing interview outlines and schedules.

_____ 4. Developing observational techniques.

_____ 5. Other instrument developments: ______________________________

____

D. Collecting project data.

_____ 1. Interviewing.

_____ 2. Surveying literature.

_____ 3. Conducting laboratory experiments.

_____ 4. Administering questionnaires.

_____ 5. Administering tests.

_____ 6. Other data collection: ______________________________

____

E. Analyzing data.

_____ 1. Preparing or using frequency tallies and/or marginal distributions (as in Chi-Square tests).

_____ 2. Computing or using measures of central tendency (i.e., means, medians, modes, arithmetic average).

_____ 3. Computing or using correlation coefficients, including simple correlational analyses.

_____ 4. Computing and interpreting simple tests of significance of differences in observed data (such as t-tests).

_____ 5. Computing and interpreting data from analysis of variance designs.

_____ 6. Computing and interpreting regression analyses.

_____ 7. Examining and interpreting non-quantified information (such as verbal responses, observed activities, etc.).

_____ 8. Computing item analyses of test items.

_____ 9. Other data analysis: ______________________________

____

F. Writing.

_____ 1. Writing correspondence.

_____ 2. Writing research proposals.

_____ 3. Writing major project reports.

_____ 4. Writing interim, status, or periodic reports.

_____ 5. Writing for professional publications.

_____ 6. Writing administrative reports.

_____ 7. Writing literature surveys.

_____ 8. Other writing: ______________________________

____

G. Supervising and coordinating actions of others, and/or of material resources.

_____ 1. Procurement of project staff.

_____ 2. Establishing contact with and participation by other personnel or agencies.

_____ 3. Reviewing performance of project personnel.

_____ 4. Communicating personnel evaluations to individuals.

_____ 5. Scheduling project activities.

_____ 6. Allocating responsibilities to project personnel.

_____ 7. Other supervision: ______________________________

____

H. Teaching or training.

_____ 1. Participating in classroom instruction.

_____ 2. Participating in conduct of seminars or workshops.

_____ 3. Providing on-the-job training to individuals.

_____ 4. Designing appropriate learning situations.

_____ 5. Other instruction-related activities: ______________________________

____

I. Meeting, consulting, or advising.

______ 1. Contacts with funding sponsor or monitor of project.

______ 2. Contacts with higher agency management for review of project.

______ 3. Presentations made at professional meetings to communicate various aspects of project activities or results.

______ 4. Meeting with visiting personnel from other agencies.

______ 5. Other participation in meetings: ______________________________

____

J. Other general category of work: ______________________________

____

(specify and rate each specific activity you do)

______ 1. ______________________________

______ 2. ______________________________

______ 3. ______________________________

______ 4. ______________________________

Write in the specific activities you do in any other general category of work, and rate each.

K. Miscellaneous Activities.

___ 1. Editing and/or proofing of printed materials.

___ 2. Formulating hypotheses or questions to be answered by research.

___ 3. Determining constraints to problem solution, such as time, money, personnel, and market factors.

___ 4. Developing budgets for tasks or projects.

___ 5. Planning and/or making arrangements for field tests, training, trial centers, demonstrations, installations, etc.

___ 6. Planning of behavioral, attitudinal, and/or learning change in some target group.

___ 7. Identifying appropriate measures for events, variables, or other measurement concerns.

___ 8. Fabricating of physical items, such as response recorders, stimulus presentation devices, room partitions or furniture, prototype devices, etc.

___ 9. Performing aspects of job and/or task analysis.

___ 10. Deriving or otherwise verifying the merit and/or relevance of student performance objectives (behavioral objectives).

___ 11. Collecting and organizing information relevant to the preparation of a public information, dissemination, product distribution, or marketing plan.

___ 12. Drawing implications from the results of prior research (interpret, evaluate, and synthesize the relevant literature).

___ 13. Analyzing the nature of various audiences or "publics" to prepare appropriate communications..

___ 14. Writing of computer programs for data handling or analysis.

___ 15. Writing of programmed instruction outlines and/or frames.

___ 16. Writing of detailed lesson plans.

___ 17. Conducting demonstrations of development products before various groups, and answering questions asked by members of the group.

___ 18. Preparing visual materials, such as films, slides, video tapes, visual teaching aids, etc.

___ 19. Conferring with colleagues, staff, and/or students.

___ 20. Interacting directly with personnel of other agencies, such as for field tests, at trial learning centers, potential users of R & D products, etc.

___ 21. Speaking before public groups or specific target audiences.

Form 05-A
Project # ☐☐☐
Page____of____pages

OUTPUT RECAP

Descriptive Label of Each Output of the Project

OUTPUT
ID No.

		1	
		2	
		3	
		4	
		5	
		6	
		7	
		8	
		9	
		0	
		1	
		2	
		3	
		4	
		5	
		6	
		7	
		8	
		9	
		0	

Form 05-B
Project # ☐☐☐
Page____of____pages

OUTPUT RECAP

Output ID No.	Completion	Output	Structure	Interviewee Number(s)												Output Category									
	W	A	B													D	E	F	G	H	I	Y	Z	C	a
1																									
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
0																									
1																									
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
0																									

APPENDIX 1 (cont'd)

Form 06

Page___of___Pages

Onsite Data Reduction

Interview Recap: Standards

Interviewer: ☐☐

Project ID No	Interviewee ID No.	Page No.	Output No.	Structure	Level	Character	Cluster Category		Primary Category			
☐☐☐	☐☐☐	☐☐	☐☐☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
				A	B	C	D	E	F	G	H	I

J	K	L	M	

APPENDIX 1 (cont'd)

Form 07

Page___of___Pages

Onsite Data Reduction

Interview Recap: Tasks

Interviewer: ☐☐

Project ID No.	Interviewee ID No.	Page No.	Output No.	Structure	Level	Character	Cluster Category		Primary Category			
☐☐☐	☐☐☐	☐☐	☐☐☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
				A	B	C	D	E	F	G	H	I

N	O	P	Q	R	Tasks

APPENDIX 1 (cont'd)

Form 08

Page___of___Pages

Onsite Data Reduction

Interview Recap: Enablers

Interviewer: ☐☐

Project ID No.	Interviewee ID No.	Page No.	Output No.	Structure	Level	Character	Cluster Category		Primary Category			
☐☐☐	☐☐☐	☐☐	☐☐☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
				A	B	C	D	E	F	G	H	I

S	T	U	V	Enablers S1 - Knowledges, S2 - Skills, S3 - Sensitivities

Project Selection Form Worksheet 01

Focus/Foci

___research

___evaluation

___development

___diffusion

___training

___other

Money

___10,000 or less

___100,000 or less

___500,000 or less

___500,000 or more

Duration

___7 mo. or less

___7+ - 15 mo.

___15+ - 36 mo.

___36+ mos.

Setting

___regional educ. lab. or educ. R&D Center

___college, dept., school of education or other university-based project

___non-university based bureau, association, institute, and miscellaneous projects

___private industry

___public school or state dept.

Start: ___________

Stop: ___________

Initial ______
Middle ______
Final ______

Source of Information:

140

Worksheet 02

Project Information from Project Officer

Project Officer ______________________ No: ______

I. Confirmation of Project Information

Project Title: ______________________

Principal Investigator: ______________________

Setting: ______________________ **Location:** ______________________

Project Funding: **Total:** **Current Fiscal Year:** ______

Project Calendar Duration:

Current Phase of Project: ______________________

II. Project Abstract

Purpose(s) of Project: ______________________

161

Description of Products to be Produced:

III. Project Staffing

Principal Staff Members:

Name: **Title:** **FTE:**

Additional Staffing Info:

IV. Institutional Linkages

Agency Relationships:

V. Project Officer Judgements

Likelihood of Project Staff Cooperation:

Good Moderate Poor

Comments:

Officer Judgement or Project Appropriateness to RDD&E:

VI. Additional Information

APPENDIX 1 (cont'd) Worksheet 03

Project Selection Data

Project Focus

Project ID #

a) Title:

b) Invest:

R D D or E

c) Location:

d) Total: Funding Duration

e) Current: ______ ______ ______

Project Identification Coding Sheet

The following chart is used to identify a new site by code number and includes reference to initial site information:

Code Number	Project Acronym	Full Project Title	Site Location	Project Director
001				
002				
.				
.				
.				

Project Personnel Coding Chart

The following chart is used to identify project personnel by code number:

Project Code Number	Project Personnel Code Number	Name of Project Personnel	Project Code Number	Project Personnel Code Number	Name of Project Personnel
001	01	Fred Smith	006	05	Gar Smith
001	02	John Doe	007	01	Jane Green

Data-Collection Personnel Coding Chart

The following chart is used to identify the data collection agency personnel by code numbers:

Code Number	Name of Agency Personnel
01	Fred Smith
02	John Doe
03	Jane Jones
.	
.	
.	

APPENDIX 1 (cont'd) Worksheet 07

Project # ☐☐☐

TRAVEL INFORMATION

ACCOMMODATIONS NEAR PROJECT LOCATION:

Hotel/Motel: ______________________________

Address: ______________________________

______________________ ____________

Telephone: ( ) ________________ Room Extension: ______

Hotel/Motel: ______________________________

Address: ______________________________

____

Telephone: ( ) ________________ Room Extension: ______

TRANSPORTATION

From Airport to Hotel: ______________________________

____

Costs: ______________________________

From Hotel to Agency: ______________________________

____

Costs: ______________________________

From Hotel to Airport: ______________________________

____

Costs: ______________________________

DISSEMINATION BROCHURE

Checklist of Materials to be Provided by RDDE Project Directors

This checklist was developed by the Teaching Research Division of the Oregon State System of Higher Education persuant to a grant from the U. S. Office of Education

APPENDIX 1 (cont'd)

Worksheet 08
Allocated
Project # ☐☐

DISSEMINATION BROCHURE

Checklist of Materials to be Provided

By RDDE Project Directors

In an attempt to quickly gain as much understanding as possible of your project, the following documents and/or information is being requested of you. It is not necessary for you to expend much time in the preparation of this material. Simple line charts, handwritten statements, etc. are quite acceptable. As a guide for you to use in your preparation, a number of attachments have been included. Information collected is to be collated and presented in a form designed to describe RDD&E activities as they exist in the field, and to preclude any use of data for judgment purposes.

1. One copy of the original project proposal (inclusion of the budget statements is left to your discretion. ☐☐
2. One copy of each official project report.
3. One copy of any available dissemination materials which describe the project (brochures, pamphlets, etc.). ☐☐
4. An organization chart of the project which includes the title of each position, the names of personnel assigned to these positions and the percentage of their time assigned to the position. (See Attachment A for example). ☐☐
5. A general schedule of project events as ordered over time. (See Attachment B as an example). ☐☐
6. Job descriptions of all project staff. (See Attachment C for an example). ☐☐
7. Vita for all project staff. The vita should include the following: ☐☐
    - A. Highest degree awarded
    - B. Area(s) of speciality
    - C. Name of undergraduate institution
    - D. Name of graduate institution(s)
    - E. Sex
    - F. Age
    - G. Employment history
    - H. Publications
    - I. Salary level

8. Please indicate as accurately as possible the total number of professional staff members employed by your organization during fiscal years: ☐☐

1968/69________

1969/70________

1970/71________

9. Indicate as accurately as possible the yearly attrition rate for these personnel during: ☐☐

1968/69________

1969/70________

1970/71________

10. What was the total level of financial support for the organization during: ☐☐

1968/69________

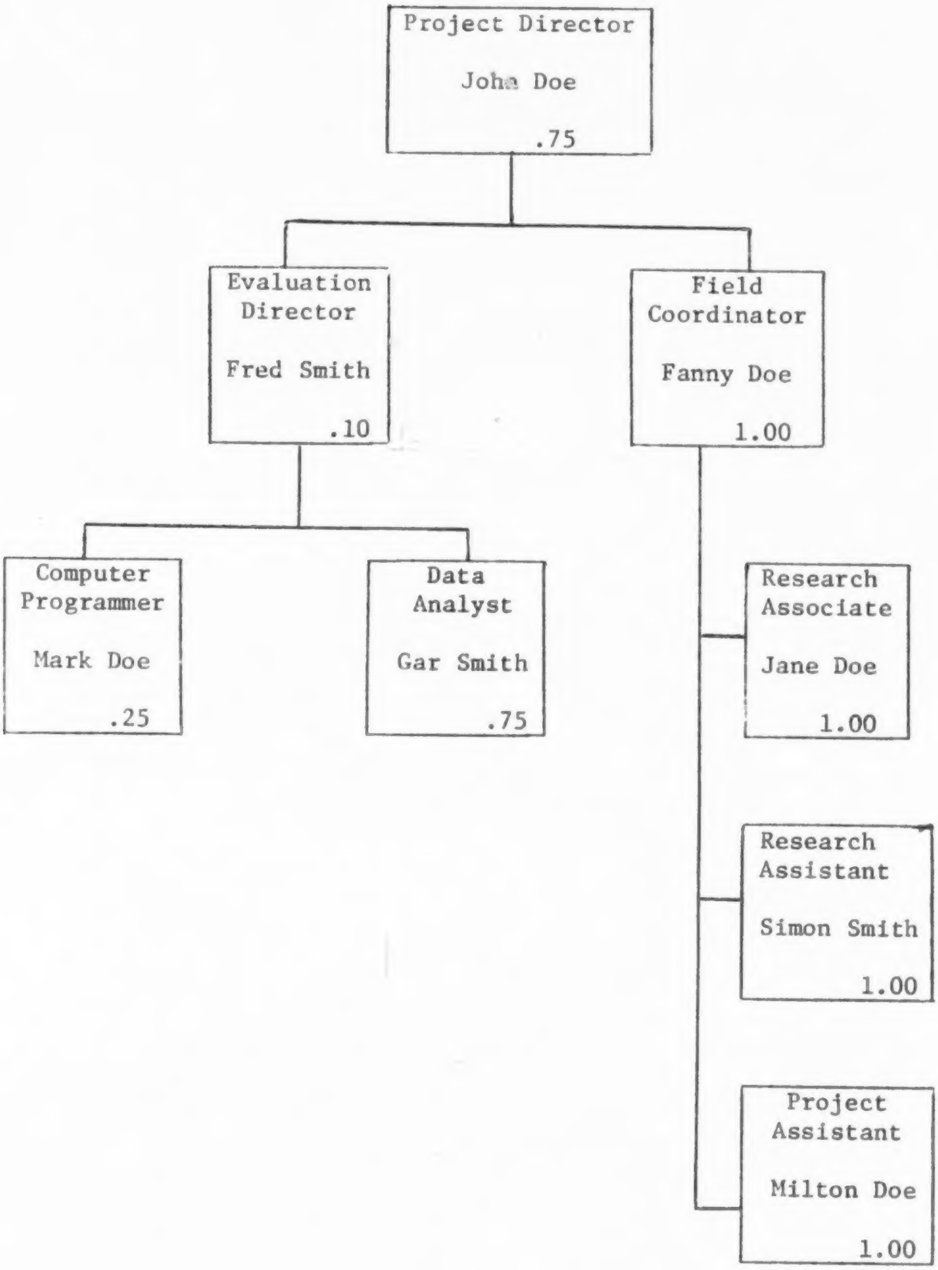
1969/70________

1970/71________

Comments:

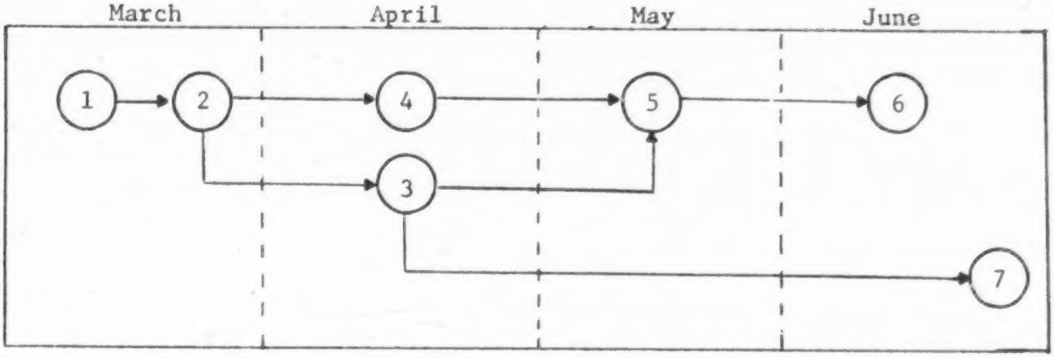
ATTACHMENT A

Project Organization Chart


Project Director
John Doe
.75
Evaluation Director
Fred Smith
.10
Field Coordinator
Fanny Doe
1.00
Computer Programmer
Mark Doe
.25
Data Analyst
Gar Smith
.75
Research Associate
Jane Doe
1.00
Research Assistant
Simon Smith
1.00
Project Assistant
Milton Doe
1.00

ATTACHMENT B

Project Time Lines



OR

Establish objectives (1)

Make team assignments (2)

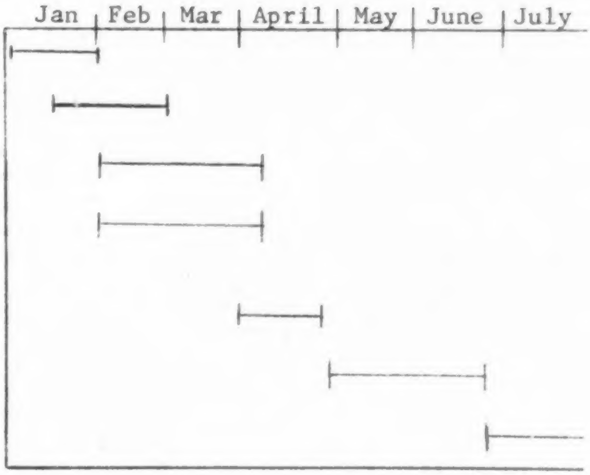
Design of evaluation instruments (3)

Area specialists begin package development (4)

First formative evaluation (5)

First package re-design (6)

Summative evaluation begins (7)



ATTACHMENT C

Job Descriptions

John Doe - Project Director

Responsible for coordinating all activities required for the successful completion of the project.

In order to accomplish his goal, he is responsible for coordinating activities at several levels, He is responsible for coordinating the fiscal and reporting activities between participating institutions. He is also responsible for coordination of activities both between and within each of the projects' phases.

In addition, due to the special background and interest of this project director, he will also be directly involved in the planning, design and production of materials directly related to the skill of ....

Fred Smith - Evaluation Director

Will assist in translating specific enabling objectives into operational terms for measurement purposes. He will then identify and/or construct criterion instruments necessary for measuring the specific enabling objectives previously translated. He will be responsible for the testing procedures, and the analysis of data.

Worksheet 09

OUTPUT INTERVIEW

Page____ Of____

PROJECT TITLE: ______________________________ INTERVIEWER: ______________

INTERVIEWEE: ______________________________ POSITION: ______________

DATE ______________ PROJECT CODE ______________ INTERVIEWER CODE ______________

OUTPUTS INFERRED FROM PROPOSAL	OUTPUTS CONFIRMED BY INTERVIEW	ASSOCIATED STAFF	TIME

Contextual Cue Items*

Do any of the following affect either the categories of tasks or the way in which tasks are performed on the observed project? (Use spaces below as soon after interview as possible.)

1. Physical setting
   a. total project space: size, sound, color, smell, etc.
   b. individual working space
   c. project space
   d. climate, geographic: temperature, humidity
   e. other

2. Management process and communication with project
   a. decision-making (consensus, democratic, authoritarian, etc.)
   b. staff selection, retention, promotion
   c. staff meetings
   d. use of memos, charts, etc.
   e. availability of peers, supervisors

3. Time, money or other factors which influence staff

4. Interaction with consultants or other agencies

5. Relationship of project to agency

---

* This worksheet is prepared individually by each interviewer, preferably with reference to each interview conducted. It may also be used as the basis for team debriefing, thus supplementing contextual data.

6. Support services - help or hindrance
   - a. secretarial: prompt/slow, professional/poor
   - b. media: prompt/slow, quality, availability
   - c. research and/or evaluation team or unit: help or hindrance

7. Overall philosophy or culture of project or agency: do concepts of excellence, expedience, politics, or professional inter-action affect the content or nature of this project.

8. Group process factors: friendship, professional enmities, group consolidation or fragmentation.

9. Reporting Responsibilities: intra-agency reporting, interim reports to funding agency, final reports.

10. Sense of emotional financial or professional payoff; or sense of importance or worth of project goals.

11. Any other factor you feel has influenced the content or value of data collected.

APPENDIX 1 (cont'd)

Worksheet 12

Interview Record Form

Interviewer ☐☐

Standards

Project ID# ☐☐☐

Interviewee ID# ☐☐

Output ID# ☐☐☐

Focusing Leads and Follow-up Probes	Check Off	Notes: (To facilitate follow-up inquiry, re-cap, capturing contextual data, etc.)
"We would like to find out what you can tell us about the production of ____________" (output). Opening "standards" inquiry "Let's look first at the standards held for the quality of (this output). For ___________ (output). . . . . .what standards were used to judge its adequacy?" by whom? . . .what did you use or make judgments about?" . . .how about judgments about the processes used? Elaborate: Consensus Personal feeling Meets criteria		

Interview Record Form

Interviewer ☐☐

Tasks

Project ID# ☐☐☐

Interviewee ID# ☐☐

Output ID# ☐☐☐

Focusing Leads and Follow-up Probes

Opening "tasks" inquiry

"Now let's look at the tasks necessary to (accomplish) this output to the standards set for it."

Probe 1: "What steps were taken before getting into actual production? As you spell these out, indicate which of them involved you personally."

Elaborate:
- We planned
- We organized
- We wrote objectives
- We designed
- We examined problem

Probe 2: "What steps were taken in producing ________" (output). Indicate which ones of them involved you personally.

Elaborate:
- We collected data
- We judged quality
- We distributed
- We built the thing

Check Off	Notes: (To facilitate follow-up inquiry, recap, capturing contextual data, etc.)

Interview Record Form Interviewer ☐☐

Enablers

Project ID# ☐☐☐ Interviewee ID# ☐☐ Output ID# ☐☐☐

Focusing Leads and Follow-up Probes	Check Off	Notes: (To facilitate follow-up inquiry, re-cap, capturing contextual data, etc.)
Opening "enabler" inquiry "I'd like now to ask about. . Probe 1: . . .what must be known in order to. . . . . .which did you know?" Probe 2: . . .what skills must be utilized?" . . .which did you use?" Probe 3: . . .what sensitivities were utilized?" . . .which did you use?"		

APPENDIX 1 (cont'd)

Worksheet 13

Training Suggestions Recap

Page___of___pages

Project ID# ☐☐☐

Interviewee ID# ☐☐

Output ID# ☐☐☐

Interviewer ☐☐

Training Suggestions	Associated Output, Task, or Enabler

APPENDIX 1 (cont'd) Worksheet 14

Interviewer Notes on Interrelationships

Project ID# ☐☐☐

Interviewer ID# ☐☐

Note any observations about interrelationships of personnel, particularly as they may clarify or suggest uniquenesses in operations not implied by the organizational structure.

Notes	Associated Personnel or Outputs (as relevant)

Worksheet 16

Project # ☐☐☐

Interviewer ☐☐

Checklist of Interviewee Data Inputs

The following information should be turned in to the Coordinator of New Data Inputs by the interview team members upon their return from their site visitation:

1. A Form 03* for each interviewee (Job/Task Inventory) ______
2. A Form 04* for each interviewee (General Position Activities Questionnaire) ______
3. Uncoded recap Forms 06, 07, and 08 for each interviewee ______
4. Forms 05-A and 05-B from the Team Leader (Output Recap) ______
5. A Worksheet 11 for each interviewee (Contextual Cue Items) ______
6. A Worksheet 13 for each interviewee (Training Suggestions Recap) ______
7. A Worksheet 14 from each interviewer (Interviewer's Notes on Interrelationships) ______
8. A final Output Map from the Team Leader ______
9. A Contextual Map from the Team Leader ______
10. A Project Organizational Structure from the Team Leader ______

*Note: If these forms are not completed before the last interview session, then the interviewer should make their completion the first order of business in the last interview.

APPENDIX 1 (cont'd) Worksheet 17

Project # ☐☐☐

Checklist of Project Data Inputs

Prior to the interview team's site visitation, the following information should be turned in to the Coordinator of New Data Inputs by the:

Coordinator for Site Selection

1. A Form 01 (Project Contact Record) ______
2. A Worksheet 01 (Project Selection Form) ______
3. A Worksheet 02 (Project Information from Project Officer) ______

Institutional Representative

4. A Form 02 (Project Questionnaire) ______
5. All items on Worksheet 08 (Dissemination Brochure) ______
6. A Worksheet 09 (Output Interview) ______

Team Leader

7. An initial Output Map ______

Chart of Project Information Status

The following chart is used to record the retrieval of completed data input forms. Each space should be used as follows:

1. After "Project", record the code number and acronym of the project.

2. After "Inst-Rep", record the code number and name of the institutional representative.

3. After "Prflwtr", record the code number and name of the profile writer.

4. In space following the first "Onsite", record the date that the institutional representative is to be onsite.

5. After "Team onsite", record the date that the interview team is to be onsite.

6. Under "Site Personnel", record the code number and the name of the interviewee across from the form number with which he is associated.

7. Under "Agency Personnel", record the code number and the name of the person in the data collection agency responsible for collecting that particular form from the identified person under "Site Personnel".

8. If a form is in, check the "In" column. If it is out, check the "Out" column.

9. Under "Comment", record anything pertinent to that particular data input.

10. "OM" means Output Map.

11. "CP" means case-profile.

12. "IR" means information on interrelationships.

13. "POS" means Project Organizational Structure Chart.

14. "CM" means Contextual Map.

15. "UCR" means uncoded recaps.

16. "CRC" means coded recaps.

APPENDIX 1 (cont'd.)

Chart of Project Information Status

PROJECT
INST-REP ________ ____________
PRELWTR ________ ____________
Onsite ____________
Team Onsite ____________

Form	Site Personnel	Agency Personnel	IN	OUT	Comment
01					
02					
03					
03					
03					
03					
03					
03					
03					
03					
03					
03					
04					
04					
04					
04					
04					
04					
04					
04					
04					
04					
05A					
05B					
W11					
W11					
W11					
W11					
W11					
W11					
W11					
W11					
W11					
W11					
W13					
W13					
W13					
W13					
W13					
W13					
W13					
W13					
W13					
W13					

Form	Site Personnel	Agency Personnel	IN	OUT	Comment
UCR CRC					
UCR CRC					
UCR CRC					
UCR CRC					
UCR CRC					
UCR CRC					
UCR CRC					
UCR CRC					
UCR CRC					
UCR CRC					
OM POS CM CP IR IR IR IR IR W08 W08 W08 W08 W08 W08 W08 W08					

Profile Transmittal Sheet (Team)

TO: DATE:

RE: FROM:

Attached is a copy of the first rough draft of case profile #______. Please review it carefully, writing your comments directly on the draft and/or on a separate sheet. When reviewing this case profile please be particularly sensitive to the following:

1. Accuracy of content and interpretations.
2. Completeness of obtained site information and product descriptions.

Please return the profile to me by ____________________, with your written comments.

Profile Transmittal Sheet (Coordinators)

TO: DATE:

RE: FROM:

Attached is a copy of first rough draft of case profile #_______. Please look it over carefully, writing your comments directly on the draft and/or on a separate sheet. When reviewing this case profile please be particularly sensitive to the following:

1. Communicability of profile description for general audiences, including readability and clarity of style.
2. Adequate accomplishment of the conceptual intent of case profiles by RDD&E project.
3. Adequacy of specific information provided for technical audiences and potential use in the future of others.
4. Adequate handling of confidentiality of the information source.
5. Adequate handling of the sensitivity of project information and manner of description.

Please return the profile to me by __________________, with your written comments.

Profile Transmittal Sheet (Editor)

TO:

DATE:

RE:

FROM:

Attached is a copy of case profile #______. Please look it over over carefully, writing your comments directly on the draft and/or on a separate sheet. When reviewing this case profile please be particularly sensitive to the following:

1. Completeness of content.
2. Format consistency as specified in the attached Section F, Attachment 1 from the "Manual on Data Management for RDD&E.
3. Readability and clarity of style.
4. Provision of definitions of technical terms, improper use of jargon.
5. Proper spelling, grammar, and syntax.
6. Reasonable compatibility of format and style with the other profiles.
7. Adequate handling of confidentiality and sensitivity.

Please return the profile to me by _______________, with your written comments.

APPENDIX 1 (cont'd)   Worksheet 23

Profile Transmittal Sheet (Project Director)

Dear

Enclosed is a draft copy of the case profile we have prepared for your project. To reiterate, the intent of this case profile is to provide in-depth information about selected outputs which comprise your project. We have not attempted to present a historically complete review of your project, but instead have only the snap-shot which time allowed.

We would appreciate your review of the profile in terms of content accuracy, interpretations, and editing of project documents contained within the profile. Comment may be provided directly on the profile and/or on a separate sheet. If you have any concerns regarding the profile, please feel free to call collect at 000-000-0000 for:

Dr. John Doe, Project Director
Dr. Fred Smith, Project Coordinator
Mr. Gar Smith, Project Coordinator

Because of the press of time, we need to receive word from you by . Enclosed is a release form which we ask that you please sign and return. Also, please complete and return the attached rating sheet. A self-addressed envelope has been provided for the return of these forms and any other written comments.

Thank you very much for your cooperation and assistance in this matter and for your participation in the data collection process. You might be interested to know, also, that most of the information has been coded for computer storage--available for a variety of summative analyses across many projects.

Thank you again for your assistance.

Sincerely,

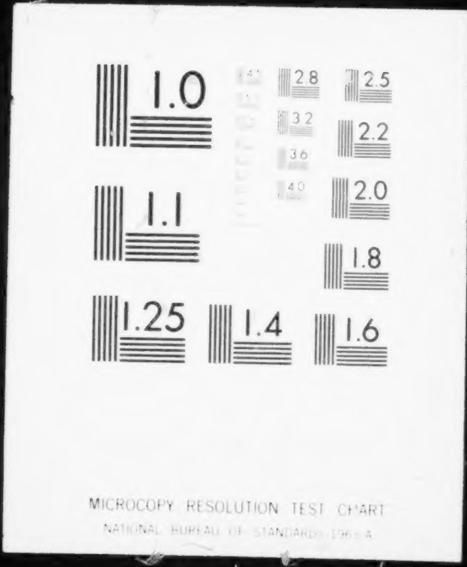
John Doe
Research Professor

JD:jj
Enclosure

3 OF 4

ED

066 844


1.0
2.8
2.5
3.2
2.2
3.6
4.0
2.0
1.1
1.8
1.25
1.4
1.6

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963-A

TEACHING RESEARCH
A Division of the Oregon State System of Higher Education
MONMOUTH, OREGON 97361
Telephone (503)838-1220

Permission is hereby granted for the inclusion of:

A CASE PROFILE OF

A PROJECT TITLED: The Evaluation of the Early Childhood Education Program

A PROJECT OF:
Appalachia Educational Laboratory, Inc.
P. O. Box 1348
Charleston, West Virginia 25325

AS PREPARED BY:
Teaching Research Division
Oregon State System of Higher Education
Monmouth, Oregon 97361

within the outputs of a project for "The Generation of Information to Support Long-Term Manpower Studies of and Planning for Training Programs in Educational Research, Development, Diffusion, and Evaluation" which is being carried out under U.S. Office of Education Grant No. 0-70-4977.

Project Director:____________________________Date___________

The Oregon State System of Higher Education is composed of Oregon State University, University of Oregon, including The Medical and Dental Schools, Oregon College of Education, Southern Oregon College, Eastern Oregon College, Oregon Technical Institute, Portland State University, Division of Continuing Education and Teaching Research Division.

Site Rating of: ______________________ (Title of project.)

(Case Profile Number 17)

To Director (and/or rater): Following your review of the Case Profile prepared on the basis of information obtained from you and your staff, a rating of the representativeness of the Profile is requested. To assist in this rating, look at each item below and rate it on the basis of the key provided. Items (1), (2), and (3) are referenced throughout the profile, with primary concentration in Chapters I and II. Items (4), (5), and (6) indicate the location in the Profile of the specific items involved. Item (7) is a measure of the degree to which the Profile as a whole represents the project.

Rating Schedule

Check box A, B, or C as follows:

A = Representative of a majority of operational concerns.
B = Representative of only a part of operational concerns (concerns of significant proportions omitted.)
C = Major concerns not covered.

Focus of rating	A	B	C	Comment, if any
1. Description of organizational structure	☐	☐	☐	
2. Description of organizational operations, interrelationships	☐	☐	☐	
3. Description of the ends being sought by the project	☐	☐	☐	
4. Representativeness of all outputs indexed (Ch. II)	☐	☐	☐	
5. Representativeness of the outputs analyzed (Ch. III)	☐	☐	☐	
6. Representative accuracy of the data on outputs (Appendix)	☐	☐	☐	
7. Overall representativeness of the Profile	☐	☐	☐	

General Comment, if any: ______________________

Appendix 2

Computer Codes: Project Characteristics (Form 02)

APPENDIX 2

Computer Codes: Project Characteristics (Form 02)

Item #1 Description and coding

7. Total Duration of the Project.
   Level 1A, Variable 11; Level 1B, Variable 10

   1. 1-7 months
   2. 8-11 months
   3. 12 months
   4. 13-15 months
   5. 16-23 months
   6. 24-29 months
   7. 30-36 months
   8. 37 months or more

8. Type of Contracting Organization in Which the Project Resides
   Level 1A, Variable 12; Level 1B, Variable 11

   1. Education Research and Development Center
   2. Regional Educational Laboratory
   3. College, School of Education, Psychology Dept., or other university office or agency
   4. Private Non-Profit Organization
   5. Industry or Commercial Organization
   6. Public School or School District
   7. State Department of Education
   8. Professional Association
   9. Agency of the Federal Government
   10. Other

9. Project Funding from all Sources

   a. Total - Level 1A, Variable 13; Level 1B, Variable 12
   b. Current Fiscal Year - Level 1A, Variable 14; Level 1B, Variable 13
   c. Last Year - Level 1A, Variable 15

   1. No funding
   2. $20,000 or less
   3. $20,001-$100,000
   4. $100,001-$225,000
   5. $225,001-$500,000
   6. More than $500,000

11. Primary Source of Funds
    Level 1A, Variable 24; Level 1B, Variable 14

    1. US Office of Education
    2. Other federal agency
    3. State
    4. Private foundation
    5. Local school district
    6. College or university
    7. Industry
    8. Other

Item # Description and coding

17. Interinstitutional Alignments
Level 1A, Variable 64; Level 1B, Variable 34

1. Single agency
2. Single agency w/subcontractors
3. Two agencies cooperating
4. Two agencies cooperating w/subcontractors
5. More than two agencies cooperating

18. Output Commitments
Level 1A, Variable 65; Level 1B, Variable 35

1. 1 Focal output
2. 2 or 3 focal outputs
3. 4 or more focal outputs

Appendix 3

Computer Codes: Personnel Characteristics (Form 03)

APPENDIX 3

Computer Codes: Personnel Characteristics (Form 03)

Item #1 Description and coding

4. Your functional job title, most descriptive of your work role on this project.
   Level 2A, Variable 4; Level 2B, Variable 4

   Not coded at present

5. Sex
   Level 2A, Variable 5; Level 2B, Variable 5

   1. Male
   2. Female

6. Age
   Level 2A, Variable 6; Level 2B, Variable 6

   1. Under 20
   2. 20-24
   3. 25-29
   4. 30-34
   5. 35-39
   6. 40-44
   7. 45-49
   8. 50-54
   9. Over 54

7. Highest Degree you hold.
   Level 2A, Variable 7; Level 2B, Variable 7

29. What level of academic training does this require?
   Level 2A, Variable 38

   1. Doctorate
   2. Specialist or Professional
   3. Masters
   4. Bachelor
   5. Associate
   6. Technical License
   7. None of these
   8. Other

9. Number of professional publications authored.
   Level 2A, Variable 8; Level 2B, Variable 8

APPENDIX 3 (cont'd)

Item #1 Description and coding

1. none
2. 1-3
3. 4-8
4. 9-15
5. 16+

10. Major area of specialty for highest degree.
Level 2A, Variable 9 & 10; Level 2B, Variables 9 & 10

11. Minor areas of specialty for college study.
Level 2A, Variables 11, 12, 13

1. Education/teaching
2. Education administration
3. Educational research
4. Guidance/counseling
5. Vocational training
6. Statistics/measurement
7. Psychology
8. Engineering
9. Computer sciences
10. English/writing
11. Business administration
12. Other

12. Your annual salary.
Level 2A, Variable 14; Level 2B, Variable 11

1. Under $5,000
2. $5,000-$8,999
3. $9,000-$11,999
4. $12,000-$16,999
5. $17,000-$21,999
6. $22,000-$29,000
7. Over $29,000

13. National Professional Memberships
Level 2A, Variable 15-21

31. Please check all support services from the list below, provided by other persons or agencies, that you must have to carry out your job on this project.
Level 2A, Variables 40-62

32. Please check all the support equipment listed below that are immediately available and used by you on this project.
Level 2A, Variables 65-75

1. If checked

Item #1 Description and coding

33. What amount of travel is expected of you on this project?
    Level 2A, Variable 78

    a. Number of trips per year
        1. none
        2. 1-2
        3. 3-5
        4. 6-10
        5. 11-15
        6. 16-25
        7. More than 25

    Level 2A, Variable 79
    b. Average duration of each trip
        1. no trips involved
        2. less than 1 full day
        3. 1 day each trip
        4. 2 days
        5. 3 days
        6. 4-5 days
        7. 6-8 days
        8. 9-15 days
        9. more than 15 days

34. To what extent are project manpower resources (number and capabilities) adequate?
    Level 2A, Variable 80

35. To what extent are project time lines and available period of performance adequate?
    Level 2A, Variable 81

36. To what extent are project financial resources adequate?
    Level 2A, Variable 82

    1. Reasonably adequate
    2. A bit tight
    3. Extremely short

37. Is some reasonable amount of project time made available to project personnel for each of the following?
    Level 2A, Variables 83-90

38. Does your project or agency expect you to engage in the following?
    Level 2A, Variables 91-98

Item #1 Description and coding

39. Check all of the following which are usually provided to you by the project leader and/or his key subordinates.
Level 2A, Variable 99-107

1. if yes
2. if no

40. Project structure as viewed by project personnel:
Level 2A, Variable 109; Level 2B, Variable 27

1. Pyramid
2. Corporate structure
3. Inverted pyramid
4. Chain of command
5. Leaderless
6. Other

41. To what extent is coordination required with this project?
Level 2A, Variable 110; Level 2B, Variable 28

42. To what extent does this project require coordination with other agencies?
Level 2A, Variable 111; Level 2B, Variable 29

1. Very minimal coordination
2.
3.
4. Moderate amounts of coordination
5.
6.
7. Very extensive and involved coordination

46. What is your relationship to the primary contractual project?
Level 2A, Variable 129; Level 2B, Variable 41

1. Regularly a part of the prime project staff.
2. An on-call member of the prime agency, performing on the project as needed.
3. Regularly a part of a sub-contractor's project staff concerned with this project.
4. An on-call member of a sub-contractor's agency, performing on the project as needed.
5. An advisor or consultant, not considered part of the regular project staff.
6. A manager or specialist within the agency, concerned with similar matters across several projects of the agency.
7. A member of an agency or unit that is participating in or cooperating with portions of this project.
8. A member of an agency or institution that will be a principal user of this project's efforts or products.
9. Other

APPENDIX 4

Data Sets and Categories

NOTE: Code numbers assigned categories were assigned in sequence for each Category Set. As a function of the evolutionary nature of the developmental process used in creating the Category Sets, occasional numbers were dropped from use and the items conntected to them integrated into other (or new) and more useful categories. The reader or user, therefore, should not be concerned about missing numbers in any apparent sequence.

APPENDIX 4

Data Sets and Categories

Summary of Category Sets

Category Set	Category Set Label
A	Structures of Outputs
B	Levels of Outputs
C	Characters of Outputs
a	Functions of Outputs
DE	Output Clusters
FGHI	Primary Categories of Outputs
J	Structures of Standards
K	Self/Others Report (for Standards)
LM	Primary Categories of Standards
NO	Task Clusters
P	Self/Others Report (for Tasks)
QR	Primary Categories of Tasks
S	Structures of Enablers
T	Self/Others Report (for Enablers)
UV	Primary Categories of Enablers
W	Output Completion Stage
X	Project Role of Interviewee
Y	Project Focus
Z	Character of Supported Focal Output

Category Set A

Structure of Outputs

Set A Coding*	Structure
1	Product
2	Event
3	Condition

---

* This code is to be given each output listed for a project prior to site visitation by an interview team, and modified as appropriate on site. It is recorded in Column A on Form 05-B for each output listed, and in Cell A on Forms 06, 07, and 08 for each output to be analyzed. Responsibility for final assignment of this code rests with the interviewer.

Category Set B

Level of Outputs

Set B Coding*	Level
1	Focal
2	Component
3	Facilitating

---

* This code is to be given to each output listed for a project prior to site visitation by an interview team, modified as appropriate on site and recorded in Column B on Form 5-B and in Cell B of Forms 06, 07, 08 for each output to be analyzed. Responsibility for final assignment of this code rests with the Team leader.

APPENDIX 4 (cont'd.)

Category Set C

Character of Outputs

Set C Coding*	Characters
1	Knowledge
2	Technology
3	Implementation
4	Information

---

* This code is to be given each output listed for a project prior to site visitation by an interview team, modified as appropriate on site, and recorded in Column C on Form 05-B for each output listed, and in Cell C on Forms 06, 07, and 08 for each output to be analyzed. Responsibility for assignment of this code rests with the Coding Resolution Team.

APPENDIX 4 (cont'd.)

Category Set a

Function of Outputs

Set a Coding*	Function
1	Policy-Setting
2	Management
3	Production

---

* Responsibility for assignment of this code rests with the interview team leader with confirmation by Coding Resolution Team, and entry is to be made in Column a on Form 05-B.

Clusters of Outputs

Clusters of Products (Category Set A-1)

Set DE Coding*	Clusters
01	Reports/Contracts
02	Data Instruments/Techniques
03	Guides/Manuals
04	Work Specifications/Procedures
05	Work Management Systems
06	Data Management Systems
07	Resource Lists
08	Plans/Designs/Theories/Models
09	Equipment/Tools/Facilities
10	Publications
11	Promotional Materials
12	Instructnl Units/In-School
13	Instructnl Units/Extra-School
14	Instructnl Units/Use w/Staff
27	Data (including printouts)
28	Taxonomies
29	Recommendations
36	Curricular Objectives
37	Critiques
42	Prediction Variables

---

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns DE on Form 05B for each product listed for a project, and in Cells DE on Forms 06, 07, and 08 for each product to be analyzed.

Clusters of Outputs (cont'd.)

Clusters of Events (Category Set A-2)

Set DE Coding*	Clusters
15	Staff Meetings
16	Conferences/Seminars
17	Workshops/Institutes
18	Presentation
19	Benchmark Decisions
30	Committee/Consultant Meetins
31	Field Trails/Experiments
32	Recruiting/Placing Staff
33	Collecting/Analyzing Data
38	Training
39	Updating of Machine Systems
40	Acquiring Supplies/Facilities
43	Establishing Opns Parameters
47	Coordinating Efforts
48	Maintaining Accountability
49	Establishing Field Sites
50	Disseminating Info/Outputs
51	Acquiring Funds
52	Adapting Materials

---

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Column DE on Form 05B for each event listed for a project, and in Cells De on Forms 06, 07, and 08 for each event to be analyzed.

Clusters of Outputs (cont'd.)

Clusters of Conditions (Category Set A-3)

Set De Coding*	Clusters
20	Cooperative Relationships
21	Working Environment/Atmosphere
22	Quality Assurance
23	Accountability
25	Resource Accessibility
26	Available Field Sites
34	Coordinated Efforts
35	Acceptance/Adoption of Outputs
41	Effective Communication
44	Provision for Services
45	Informed Public
46	Trained Staff

---

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns DE on Form 05B for each condition listed for a project, and in Cells DE on Forms 06, 07, and 08 for each condition to be analyzed.

Category Set FGHI

Primary Categories of Outputs

Primary Cateogires of Products (Category Set A-1)

Set FGHI Coding*	Primary Categories (A-1)
0001	Prototype Tryout Data
0002	Research Design
0003	Microformed Bibliographies
0006	Terminal Report
0007	Proposal
0013	Project Time Line/Schedule
0016	Advisory Committee
0017	Terminal Instr Objectives
0018	Enabling Instr Objectives
0019	Content OUtline, Instructional
0020	Syndactic Text Instr Materials
0021	Remedial Units for Syndactic Texts
0022	Single-Concept Instr Films
0023	Video Tape Instr Modules
0024	Audio Tape Instr Modules
0025	Activities Outline: Instr Units
0026	Computer Asst/Ext Instr Units
0027	Linear Programmed Instr Text
0028	Intrinsically Programmed Text
0029	Site Assessment Criteria
0030	Materials Presentation Design
0031	Criterion-Based Test Item Pool
0032	Norm-Referenced Test Items
0033	Learner Data File
0034	Instructional Unit Use Guide
0035	Parent Instr Unit Use Guide
0036	Model: Developing Instr Units
0037	Computer-Based Instr Unit
0038	Research Data
0039	Interview Training Procedures
0040	Description of Program/Project
0041	Site Visit Checklist
0042	Selection Criteria: Sites etc
0043	Guidelines for Site Visits
0044	Interview Data/Information
0045	Site Visitation Schedule
0046	List of Field Settings
0047	A/V Descriptions of Program
0049	Progress Check Test

Primary Categories of Outputs (cont'd.)

Set FGHI Coding *	Primary Categories (A-1, cont'd.)
0050	Structural Communication Unit
0052	Panel Book Visuals: Audio Tape
0053	Abstracted Descript: Programs
0055	Report Specifications
0060	Validation Criteria for Data
0061	Observation System
0062	Team Rotation Plan
0064	Cost Estimates
0065	Test Procedure, I-M Handling System
0066	List of Project Products
0067	Implementing Plan, I-M Handling
0068	Review/Procedures I-M Handling
0069	Design Review Data, I-M System
0070	Design for I-M Handling System
0071	Review of Design Report
0072	Specs: Hardware Requirements
0073	Specs: Software Requirements
0074	Specs: Operation Requirements
0075	Manual for I-M Handling Sys
0076	Specs: I-M Handling Sub-Systems
0077	Specs: Automated I-M System
0078	Major Task Descriptions
0079	Cost Categories: Oper System
0081	Interview Guide
0082	Questionnaire
0083	PERT Chart
0085	Project Operational Plan
0086	Bibliographies
0087	List of Potential Output Users
0088	List of User Needs
0089	Status Condition Report
0090	Report of Operations Analysis
0091	Performance Specs: I-M System
0092	Design Alternates for Evaluation
0093	Design Concepts, I-M System
0094	Automated I-M Handling System
0095	Description/Specs for Output
0096	Evaluation Checklist
0097	Journal Article, Published
0099	Progress Report

Primary Categories of Outputs (cont'd.)

Set FGHI Coding*	Primary Categories (A-1, cont'd.)
0104	Instructional Package, Medium
0105	Instructional Package, Small
0106	Cumulative Post Test
0107	Master Tutor Instr Unit
0108	Supplementary Instr Materials
0110	Content Map for Instr Course
0115	Project Products Dstrb System
0117	Program (within project) Plan
0118	Formulated Policy
0121	Script, Film
0125	Promotional Film
0128	Multimedia Leadership Course
0129	Television Program
0130	Animated Film: REading Program
0131	Live Action Film: Reading Prog
0132	Video Tape, TV Prog Component
0133	Serialized TV Adventure Script
0134	Serialized Storey Manuscript
0135	Television Program Magazine
0136	Curriculum for Reading Program
0137	Ref Manual: Instr in Reading
0138	Story Boards
0139	Non-fiction Books (commercial)
0140	Promotional Phonograph Records
0141	Film Strip Promotional Unit
0144	Financial Report
0145	Intraagency Opns Control Form
0146	Contracts for Services
0147	Live-Action Film for TV Show
0148	Animated Film for TV Show
0149	Ref Index: Film for TV Program
0150	Scripts for TV Program
0151	Curriculum for Ed TV Program
0152	Video Tapes, completed TV Prog
0153	Specifications for Facilities
0154	Specifications for Personnel
0155	Info/Idea Notebook for Writers
0157	Sound Track: A-V Presentation
0158	Evaluation Report
0159	Project Newsletter

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Primary Categories of Outputs (cont'd.)

Set FGHI Coding*	Primary Categories (A-1, cont'd.)
0160	Training Film for Educators
0161	Diffusion Staff Trng Program
0162	Demo of Follow-Up to A-V Learning
0163	Training Film for Parents
0164	Diffusion Mannual/Guidelines
0167	Community Resource Directory
0168	Demographic Data
0169	Diffusion Impact Data
0170	Community Resource Data
0171	Pre-school Guide Activity Data
0172	Pre-sch Lrng Matter Teacher Use
0173	Pre-sch Lrng Matter Parent Use
0174	Pre-sch Lrng Activities, Tchr
0175	Pre-sch Lrng Activities, Parent
0177	Trng Program for Lay Personnel
0180	Pilot Instr Program (movie)
0181	Interagency Opns Control Form
0182	List: Distrib Agencies/Points
0183	List of Resource Personnel
0184	Mailing Lists
0185	Needs Identification Data
0186	Specs: Free Product Dtbg Sites
0187	Descriptive Data Tests, subject
0188	Normative Data
0189	Data on Product Appeal
0190	Product Review/Critique
0192	Specs: Data Gathering Instrmnt
0194	Learner Achievement Data
0195	Social Interaction Data
0197	Descr of Research Variables
0198	Sight Vocabulary List
0199	Item Analysis Data
0201	Professional Report/Monograph
0202	Catalog of Available Products
0203	Learning Activity Books
0204	Learning Activity Toys/Games
0205	Pre-school Text Books
0206	Educational Greeting Cards
0208	Plans: Future Project Dvlpmnt
0209	Speech Texts

Primary Categories of Outputs (cont'd.)

Set FGHI Coding*	Primary Categories (A-1, cont'd.)
0211	Handling Sys: Project Outputs
0212	Educational Calendar
0213	Children's Activity Center
0214	Satellite Management Center
0215	Learning Kit, commercial
0216	Dissertation
0217	Observation Record Form
0218	Quality Control Schema
0219	Student Performance Objectives
0220	Data Analysis Procedures
0221	Source List for Objectives
0222	Data Collection Procedures
0223	Taxonomy for Learner Outcomes
0224	Attitude Meas, Congitive Value
0225	Rationale for Data Instrument
0226	Rational for Data Instrument
0227	Compendium: Instr Objvs and Msmt
0228	Compendium: Instr Objectives
0229	Attitude Measure, Tolerance
0230	Technical Report
0231	List: Acquisition/Data
0232	Specs: Output Revisions
0233	Curricular Recommendations
0235	Baseline Data
0236	Single Concept Learning Unit
0237	Model of Skills Acquisition
0238	Model of Content Discipline
0239	Compendium of Measures
0240	Working Papers
0242	Data Handling Codes
0244	Coded Data
0245	Computer Printouts
0249	Staff Development Trng Unit
0250	Pupil Svc Personnel Trng Unit
0251	School Paper
0252	Information Brochures
0253	Curriculum Dvlpmnt Guidelines
0255	Interview Reports
0256	Field Test Plan
0257	Conference/Workshop Agenda

APPENDIX 4 (cont'd.)

Primary Categories of Outputs (cont'd.)

Set FGHI Coding*	Primary Categories (A-1, cont'd.)
0259	Evaluation Model
0260	Summative Evaluation Data
0261	Formative/Field Test Eval Data
0266	Journal
0267	Indexes
0268	Microform Copy
0269	Correspondence
0270	Computer Program Documentation
0272	Publication Proof Copy
0273	Publication (not identified)
0274	Usage Report
0275	Project Objectives
0276	Articles: House Publications
0278	Prospectus/Letters of Intent
0279	Conceptual Framework
0280	Specs: Filming Techniques
0281	Evaluation Plan/Design
0282	Memos/Directives/Bulletins
0285	Organizational Chart
0286	Survey Reports
0287	Key Indicators: Condition School
0288	Task/Time Allotments
0289	Directories
0290	Census Data
0291	Management Information Center
0292	Mediated Data Display
0292	Review/Refinement Procedures
0294	Operations Progress Chart
0297	Feedback System Classroom Mgmt
0301	PPBS Manual
0303	Computer Instr in Computer Use
0304	Computer Simulation: Operation
0305	Project Promo Presentation Pkg
0306	Clearinghouse: RDD&E Outputs
0307	Use Guide for Card Sort System
0308	Data-Handling Cards
0309	Worksheets: Proj Documentation
0310	Script: Film/Tape Presentation
0320	Trng Program in Group Dynamics
0321	Content Outline Guides/Manuals

Primary Categories of Outputs (cont'd.)

Set FGHI Coding*	Primary Categories (A-1, cont'd.)
0324	Budget Allocations
0326	Reporting Procedures
0327	Coordination/Liaison Procedure
0329	Work Assignment Record
0332	Magazine/Newspaper Article
0334	Theory Papers

---

* Responsibility for assignment of this code rests with the Coding Resolution Team. It is recorded in Columns FGHI on Form 05B for each product listed for a project and in Cells FGHI on Forms 06, 07, and 08 for each product to be analyzed.

Primary Categories of Outputs (cont'd.)

Primary Categories of Events (Category Set A-2)

Set FGHI Coding*	Primary Categories (A-2)
0008	Evaluating Hardware
0011	Acquiring Microform Hardware
0012	Assigning Work
0014	Disseminating Information
0015	Making Management Decisions
0098	Info Dissemination Workshop
0103	Acquiring Course Materials
0114	Field Tests
0119	Speeches
0120	Acquiring Funds
0143	Acquiring TV Studio Hardware
0156	Pre-use Critique: A-V Program
0165	Acquiring Facilities
0176	Training Workshop/Conference
0178	Acquiring Television Sets
0191	RDD&E on the Job Training
0200	Policy Setting Seminars
0234	Reviewing Status/Quality
0241	Selecting Personnel
0243	Interviewing
0246	Interpreting Data Analysis
0258	Development (work) Conference
0262	Selecting of Performance Items
0264	Staff Meetings
0265	Collecting Data
0271	Modifying Systems
0277	Acquiring of Filming Equipment
0284	Staff Retreat
0296	Planning Proj Opns/Guidelines
0311	Surveying by Telephone
0312	Surveying Costs
0313	Selecting Field Test Sample
0314	Coding Data
0316	Coordinating Data Collection
0317	Maintaining Project Progress

Primary Categories of Outputs (cont'd.)

Set FGHI Coding*	Primary Categories (A-2 cont'd.)
0318	Maintaing Fiscal Acctability
0322	Negotiating Participation/Coop
0323	Making Policy Decisions
0325	Acquiring Operational Supplies
0328	Conducting Experiments
0331	Expanding Product Availability
0333	Surveying the Literature
0335	Revising Existing Materials

---

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns FGHI on Form 05B for each event listed for a project, and in Cells FGHI on Forms 06, 07, and 08 for each event to be analyzed.

Primary Categories of Outputs (cont'd.)

Primary Categories of Conditions (Category Set A-3)

Set FGHI Coding*	Primary Categories (A-3)
0004	Project Publicity
0005	Adequate Field Setting
0009	Managed Money Resources
0010	Adequate Staff
0054	Staff Awareness/Acceptance
0056	Compatible Work/Expense Rates
0057	Decision Making Structure
0058	Quality Output
0059	Operations Efficiency, Project
0084	Interagency Coordination
0100	Staff Welfare
0101	Intra/Inter Agency Relations
0109	Staff Morale
0111	Inter/Intra Agency Cooperation
0112	Project Accountability
0113	Site Personnel Welfare
0116	Managed Production Personnel
0124	Atmosphere: Feeling Effective
0126	Relationship with TV Networks
0127	Adherence to Project Philosophy
0166	Facilitated Product Distrib
0179	Consulting Services
0193	Intra/agency Coordination
0196	Effective Communications
0207	Project Management Structure
0247	Adequate Facilities/Equipment
0254	Community/Parent Involvement
0263	Monitored Project Operations
0283	Adequate Information Flow
0295	Healthy Atmosphere: Criticism
0298	Maintained Program Operations
0299	Test Construction Service
0300	Measurement Service
0302	Informed Public
0315	Project Leadership

Primary Categories of Outputs (cont'd.)

Set FGHI Coding*	Primary Categories (A-3, cont'd.)
0319	Adequate Community Interface
0330	Adequate Support Linkages
0336	Coordinated/Compatible Outputs

---

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns FGHI on Form 05B for each condition listed for a project, and in Cells FGHI on Forms 06, 07, and 08 for each condition analyzed.

APPENDIX 4 (cont'd.)

Category Set J

Structure of Standards

Set J Coding*	Structure
1	Output Standard
2	Process/Operations Standard

---

* Responsibility for assignment of this code rests with the Coding Resolution Team. It is recorded in Column J of Form 06 for each statement of a standard associated with the output being analyzed.

APPENDIX 4 (cont'd.)

Category Set K

Self/Others Report (for Standards)

Set K Coding*	Self/Others Report (for Standards)
1	Self
2	Others
3	Team

---

* Responsibility for assignment of this code rests with the interviewer as each interview is recapped on Form 06. As each statement of a standard is recorded, the appropriate Self/Others code is entered in Column K.

Category Set LM

Primary Categories of Standards

Primary Categories of Output Standards (Category Set J-1)

Set LM Coding*	Primary Categories (J-1)
01	Completeness of content
02	Quantity of outputs/data
03	Quantity of effort expended
04	Communication and clarity
05	Utility or value
06	Acceptance by users
07	Personal satisfaction/feeling
08	Agreement/concurrence w/others
09	Lack of errors/discrepancies
10	Obvious (direct) termination
11	Appropriate design/content
12	Goal attainment
13	Acceptance by others (in proj)
14	Acceptance by sponsor
15	Compliance w/sponsor guideline
16	Compares favorably
17	Internally consistent
18	Satisfactory appearance
19	Logical criteria
20	Performs consistently
21	Sources of variance controlled
22	Functions as planned
23	Successfully constrains/guides
24	Terminology appropriate
25	Awareness that outputs exist
26	Components are complimentary
27	Good physical repair/quality
28	Operable by others
29	Meets design expectations
30	Lack of negative feedback
31	Meets legal constraints
32	Created by reputable producer
33	Inclusions are representative

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns LM on Form 06 for each statement of an output standard associated with the output being analyzed.

Primary Categories of Standards (cont'd.)

Primary Categories of Process/Operations Standards (Category Set J-2)

Set LM Coding*	Primary Categories (J-2)
01	Personnel cooperate
02	Personnel are satisfied
03	Minimum correction required
04	Deadlines are met
05	Acceptable level of output
06	Work structure is efficient
07	An expected activity occurs
08	Staff contributions accepted
09	Outside contributions accepted
10	Maximum possible participation
11	Costs consistent w/estimates
12	No obvious omissions
13	Work conducted w/in budget
14	No felt deficiencies
15	Tasks perceived and acted upon
16	External cooperation gained
17	External enthusiasm evident
18	Desired personnel obtained
19	Adequate reputation w/sponsor
20	Performance respected
21	Follow-on proposals are funded
22	Feedback occurs
23	Project view accepted
24	Costs acceptable for benefits
25	Staff reflect trust
26	Values and objectives match
27	Decisions result in action
28	Closure reached on questions
29	Creativity in work evidenced
30	Personnel loss not excessive
31	Overtime worked voluntarily
32	Resources available on request
33	Personal growth/productivity
34	Impact of effort favorable
35	Outputs distributed/requested
36	Employment criteria met
37	Staff adaptive to situations
38	Equity in opportunity to input
39	Evidence of pre-planning
40	Outputs published externally

Primary Categories of Standards (cont'd.)

Set LM Coding*	Primary Categories (J-2, cont'd.)
41	Guidelines are followed
42	Revision yields improvement
43	Policy constraints minimal
44	Responsibility taken willingly
45	Resources used efficiently
46	Staff are self-directing

---

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns LM on Form 06 for each statement of a process/operations standard associated with the output being analyzed.

APPENDIX 4 (cont'd.)

Category Set NO

Task Clusters

Set NO Coding*	Task Clusters
01	Clarifying problem addressed
02	Formulating objectives
03	Designing the output
04	Producing the output
05	Collecting/processing data
06	Assessing the output quality
07	Diffusing the output
21	Procuring professional staff
22	Effecting accountability
23	Procuring systems/services
24	Effecting quality control
25	Maintaining job satisfaction
26	Facilitating growth of staff
27	Enhancing physical environment
28	Maintaining equity among staff
29	Facilitating relationships
30	Effecting info flow patterns
31	Diffusing info within project
32	Diffusing info beyond project
33	Effecting decision mechanisms

---

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns NO of Form 07 in conjunction with a "QR" classification for each statement of a task associated with the output being analyzed. (See Category Set QR)

APPENDIX 4 (cont'd.)

Category Set P

Self/Others Report (for Tasks)

Set P Coding*	Self/Others Report (for Tasks)
1	Self
2	Others
3	Team

---

* Responsibility for the assignment of this code rests with the interviewer as each interview is recapped on Form 07. As each statement of a task is recorded, the appropriate Self/Others code is entered in Column P.

Category Set QR

Primary Categories of Tasks

Set NO QR Coding*	Primary Categories (Cluster NO-01)
01 01	Review problem-relevant literature/info
01 02	Specify context/scope/limits of effort
01 03	Specify variables to be studied
01 04	Identify contaminating variables
01 05	State major hypotheses/philos position
01 06	Observe relevant/related field opns
01 07	Identify characteristics tgt population
01 08	Determine problems to be addressed
01 09	Determine sensitive areas in tgt context
01 10	Determine priorities of problems
01 11	Visualize application of technique/ideas
01 12	Review of/familiarization w/materials
01 13	Obtain literature relevant to problem
01 14	Compare existing frameworks/procedures
01 15	Operationally define terms/variables
01 16	Identify/assess divergent points of view

---

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns NOQR on Form 07 for each statement of a task classifiable within Cluster NO-01.

Primary Categories of Tasks (cont'd.)

Set NO	Set QR Coding*	Primary Categories (Cluster NO-02)
02	01	Conceptualize the theoretical framework
02	02	Conceptualize the product and context
02	03	Formulate specific questions/hypotheses
02	04	Determine nature of msmt objectives
02	05	State problem in context of theory
02	06	Create objectives
02	07	Confer with colleagues/others re objects

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns NOQR on Form 07 for each statement of a task classifiable within Cluster NO-02.

Primary Categories of Tasks (cont'd.)

Set NO QR Coding*		Primary Categories (Cluster NO-03)
03	01	Identify decision situations of interest
03	02	Isolate contaminating variables
03	03	Determine relation of variables/compnts
03	04	Select/specify population(s) involved
03	05	Specify/select grouping/sampling
03	06	Specify treatments/procedures/strategies
03	07	Conceptualize output application
03	08	Translate objectives/data into meaning
03	09	Visualize/specify format/appearance
03	10	Specify/identify character of materials
03	12	Estab tolerances/effectiveness criteria
03	13	Establish specs for output try-out/demo
03	15	Specify site adaptations required
03	17	Specify measures to be used
03	18	Specify data/info processing/up-date
03	19	Specify kind of data analysis to be used
03	20	State overall design
03	22	Specify data collection schedule
03	23	Consider/design alternative approaches
03	24	Visualize/specify effect of output

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns NOQR on Form 07 for each statement of a task classifiable within Cluster NO-03.

Primary Categories of Tasks (cont'd.)

Set NO QR Coding*		Primary Categories (Cluster NO-04)
04	01	Construct/assemble measurement tools
04	02	Construct/assemble components of output
04	04	Secure/select required materials/comps
04	05	Produce output
04	07	Package output
04	08	Select/produce data processing/handling
04	09	Translate outcomes/content to user terms
04	11	Get permission to use copyright material
04	12	Invent new production method/instrument
04	13	Construct/employ production tools/aids
04	14	Adapt materials for local/specific use
04	15	Copy output for other media applications
04	16	Coach talent (filming, video, sound)
04	17	Organize presentation components
04	18	Provide materials to producers
04	19	Adapt content into processing format

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns NOQR on Form 07 for each statement of a task classifiable within Cluster NO-04.

Primary Categories of Tasks (cont'd.)

Set NO QR Coding*	Primary Categories (Cluster NO-05)
05 01	Conduct/operate program to be measured
05 02	Administer/implement data instruments
05 03	Record/score/classify/code raw data
05 04	Transfer raw data into storage form
05 05	Translate data into processing form
05 06	Perform analyses as specified/indicated
05 07	Compile computational data
05 08	Prepare supporting documentation
05 09	Interpret data
05 10	Acquire artifacts
05 11	Try-out output/component for operability
05 12	Specify job control lang for computer
05 13	Identify sub-routines req by computer
05 14	Specify parameters of sub-routines
04 15	Sequence the computer program
05 16	Determine constants inherent in analysis
05 17	Specify format for computer printout
05 18	Construct/maintain data displays
05 19	Specify/identify data identity codes

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns NOQR on Form 07 for each statement of a task classifiable within Cluster NO-05.

Primary Categories of Tasks (cont'd.)

Set		
NO	QR	
Coding*		Primary Categories (Cluster NO-06)
06	01	Check output against specifications
06	02	Judge significance of performance result
06	03	Determine achievement of objectives
06	05	Identify unexpected/incongruent outcomes
06	06	Judge output operability/acceptability
06	07	Judge output effectiveness/consistency
06	08	Determine inadequate output components
06	10	Confirm operability/validity of tools
06	11	Judge effectiveness of data gathering
06	12	Relate data to decision situations
06	14	Note/make advisable modification(s)
06	15	Proofread/edit written material
06	16	Determine adeq of implementation process
06	17	Check recommended changes specs
06	18	Judge output against personal standards
06	19	Edit video-audio-film materials
06	20	Select best alternative method/procedure

---

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns NOQR on Form 07 for each statement of a task classifiable within Cluster NO-06.

Primary Categories of Tasks (cont'd.)

Set NO QR Coding*	Primary Categories (Cluster NO-07)
07 01	Study/describe characteristics of output
07 08	Negotiate for sale of copyrighted matter
07 09	Prepare/write promotional materials
07 11	Disseminate promotional materials
07 12	Present/demonstrate output to user
07 13	Negotiate for user try-out
07 14	Negotiate user acceptance/use
07 15	Provide for user training as required
07 17	Distribute output/component
07 18	Maintain distribution list

---

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns NOQR on Form 07 for each statement of a task classifiable within Cluster NO-07.

Primary Categories of Tasks (cont'd.)

Set NO QR Coding*		Primary Categories (Cluster NO-21)
21	01	Analyze work for competencies required
21	02	Determine competencies available
21	03	Formulate job descriptions/qualif/salary
21	05	Determine need for other points of view
21	06	Maintain list of replacement personnel
21	07	Make vacancies known
21	08	Identify potential candidates
21	09	Interview/screen candidates
21	10	Select/hire/appoint personnel
21	11	Provide training as appropriate
21	12	Negotiate w/candidate to employ/partic
21	13	Determine manpower needs
21	14	Determine tasks to procure staff
21	15	Recommend personnel for employment
21	16	Obtain approval to hire
21	17	Determine/assess best staffing pattern
21	18	Obtain/assess candidate's goals
21	19	Review opns relative to existing staff
21	20	Confer w/others re candidate selection

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns NOQR on Form 07 for each statement of a task classifiable within Cluster NO-21.

Primary Categories of Tasks (cont'd.)

Set NO QR Coding*	Primary Categories (Cluster NO-22)
22 01	Specify accountability procedures
22 02	Delegate responsibilities/authority
22 03	Determine/verify/monitor budget balances
22 04	Establish/maintain time lines
22 05	Project cost estimates
22 06	Determine nature/content of reporting
22 07	Negotiate/renegotiate funding/objectives
22 08	Approve disbursement of funds
22 09	Monitor expenditure of time/svcs/money
22 10	Report status as required/appropriate
22 11	Explicate obj/outputs to be produced
22 12	Explicate procedures/strategies/duties
22 13	Interact with advisory services
22 14	Issue production orders
22 15	Prepare detailed spending plan
22 16	Compare expenditure rate with plan
22 17	Maintain duplicate records/files
22 18	Insure optimal use of resources
22 19	Maintain materials/use/fiscal records
22 20	Develop/maintain inventory system
22 21	Develop record keeping system
22 22	Estimate/provide material/personnel
22 23	Direct/request special reports
22 24	Determine/comply w/sponsor's procedures
22 25	Pay bills/collect payments
22 26	Divide work into appropriate segments
22 27	Monitor/determine cost-effectiveness
22 28	Specify/establish/adopt policies
22 29	Oversee/monitor adherence to requirements
22 30	Obtain staff input regarding time/funds
22 31	Participate in production efforts as req
22 32	Approve budget

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns NOQR on Form 07 for each statement of a task classifiable within Cluster NO-22.

Primary Categories of Tasks (cont'd.)

Set NO QR Coding*		Primary Categories (Cluster NO-23)
23	01	Determine tasks/services to be performed
23	02	Determine facilities/field material req
23	03	Identify/study possible sites/services
23	04	Select/obtain sites/facilities/services
23	05	Negotiate contract/coop w/sites/services
23	06	Get permission to use copyright material
23	07	Arrange visitation/schedule as needed
23	08	Make public service/material/site needs
23	09	Procure required tools/equipment

---

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns NOQR on Form 07 for each statement of a task classifiable within Cluster NO-23.

Primary Categories of Tasks (cont'd.)

Set NO	QR Coding*	Primary Categories (Cluster NO-24)
24	01	Specify/recommend criteria for output
24	03	Specify standards for trng effectiveness
24	04	Specify/develop improvement procedures
24	05	Delegate quality control responsibility
24	06	Monitor adherence to output specs
24	07	Monitor personnel performance
24	08	Monitor training effectiveness
24	09	Initiate/direct quality control action
24	10	Monitor progress/status of work
24	11	Proof/critique products/performances
24	12	Monitor adherence to policies
24	13	Monitor decisions made
24	14	Determine need for/present alternatives
24	15	Identify quality control issues
24	16	Negotiate quality issues with sponsor
24	17	Direct/request critiques from others
24	18	Monitor staff awareness of responsibility
24	19	Approve potential staff for employment
24	20	Monitor philosophical consistency of opn
24	21	Adjust staff for operation compatibility
24	22	Select outputs for further review
24	23	Confirm accuracy of data inputs/outputs
24	24	Monitor/judge project impact
24	25	Elicit author approval re project changes

---

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns NOQR on Form 07 for each statement of a task classifiable within Cluster NO-24.

Primary Categories of Tasks (cont'd.)

Set NO QR Coding*		Primary Categories (Cluster NO-25)
25	01	Specify/explain agency/project position
25	02	Provide means for handling staff views
25	03	Recognize merit
25	04	Counsel with/be supportive of personnel
25	05	Adjust tasks to fit interests/limits
25	06	Recommend promotions/salary increases
25	07	Encourage creativity
25	08	Reconcile differences of opinion
25	09	Encourage optimal self-direction
25	10	Foster mutual respect
25	11	Support staff in decisions they make
25	12	Foster feelings of security in job
25	13	Provide for social activities
25	14	Act on behalf of staff in agency matters
25	15	Nurture staff feelings of importance

---

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns NOQR on Form 07 for each statement of a task classifiable within Cluster NO-25.

Primary Categories of Tasks (cont'd.)

Set NO QR Coding*		Primary Categories (Cluster NO-26)
26	01	Provide for guidance within project
26	02	Provide opportunities for growth
26	03	Provide incentive for quality work
26	05	Provide opportunities for exposure
26	06	Specify ownership/authorship policies
26	07	Encourage publication of important work

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns NOQR on Form 07 for each statement of a task classifiable within Cluster NO-26.

Primary Categories of Tasks (cont'd.)

Set Coding*		Primary Categories (Cluster NO-27)
NO	QR	
27	01	Provide optimal proximity of staff
27	03	Provide for privacy
27	04	Provide meeting/relaxation facility
27	06	Optimize accessibility to equip/services

---

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns NOQR on Form 07 for each statement of a task classifiable within Cluster NO-27.

Primary Categories of Tasks (cont'd.)

Set NO QR Coding*		Primary Categories (Cluster NO-28)
28	01	Set demands in keeping with competencies
28	02	Determine excessive/low work loads
28	03	Insure equity in application of rules

---

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns NOQR on Form 07 for each statement of a task classifiable within Cluster NO-28.

Primary Categories of Tasks (cont'd.)

Set Coding*		Primary Categories (Cluster NO-29)
NO	QR	
29	01	Monitor field setting views/concerns
29	02	Give visibility to cooperating people
29	03	Give visibility to cooperating agencies
29	04	Interact w/setting to elicit cooperation
29	05	Communicate behavior required of setting
29	06	Explain/prepare rationale for procedure to site
29	07	Negotiate resolution of difference
29	08	Locate/document sources of disagreement
29	09	Adapt to accommodate differences
29	10	Promote or maintain focus of effort
29	11	Translate language into understood terms
29	12	Provide for alternate output treatment
29	13	Maintain contacts with field
29	14	Interact with setting to collaborate
29	15	Interact w/setting to enhance
29	16	Make materials/experiences available
29	17	Provide foreign language translations
29	18	Endorsement/support for field personnel

---

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns NOQR on Form 07 for each statement of a task classifiable within Cluster NO-29.

Primary Categories of Tasks (cont'd.)

Set NO QR Coding*		Primary Categories (Cluster NO-30)
30	01	Define project information flow policies
30	02	Determine/use information sources
30	03	Insure that key decision points get info
30	04	Provide communications equip/capability
30	05	Define lines of communications
30	06	Monitor information flow
30	07	Explicate/employ ways of enhancing flow
30	08	Coordinate people interactions

---

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns NOQR on Form 07 for each statement of a task classifiable within Cluster NO-30.

Primary Categories of Tasks (cont'd.)

Set NO QR Coding*		Primary Categories (Cluster NO-31)
31	01	Plan/conduct staff meetings/conferences
31	02	Make formal presentations
31	03	Produce/circulate bulletins/memos/news
31	04	Lead/participate in task-oriented groups
31	05	Join in/lead info meetings/contacts
31	06	Receive and react to relevant input
31	07	Communicate decisions made
31	08	Communicate production guidelines
31	09	Keep involved personnel informed generally
31	10	Communicate relevant experience info
31	11	Advise on admin concerns w/in expertise
31	12	Refer problem to appropriate specialists
31	13	Record events (e.g., minutes, processes)
31	14	Serve in consulting capacity to project
31	15	Advise technically within expertise

---

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns NOQR on Form 07 for each statement of a task classifiable within Cluster NO-31.

Primary Categories of Tasks (cont'd.)

Set NO QR Coding*	Primary Categories (Cluster NO-32)
32 01	Write professional papers
32 02	Prepare/disseminate promotional info
32 03	Act as consultant
32 04	Report project at agency/other meetings
32 06	Interact with dissemination services
32 07	Provide info to dissemination services
32 08	Interact with others regarding promotion
32 09	Enlist community help in dissemination
32 10	Insure appropriate visibility of project
32 11	Approve articles/papers for publication
32 12	Prepare project descriptive materials

---

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns NOQR on Form 07 for each statement of a task classifiable within Cluster NO-32.

Primary Categories of Tasks (cont'd.)

Set NO QR Coding*		Primary Categories (Cluster NO-33)
33	01	Specify/determine key decision points
33	02	Specify kinds of decisions at each level
33	03	Make decisions
33	04	Specify who needs what kinds of info
33	06	Specify vehicles for decision-making
33	07	Participate in decision-making process
33	08	Identify/specify sources of problems
33	09	Request support for decisions made
33	10	Establish organizational structure
33	11	Get partic in decisions/conceptualizing

---

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns NOQR on Form 07 for each statement of a task classifiable within Cluster NO-33.

APPENDIX 4 (cont'd.)

Category Set S

Structure of Enablers

Set S Coding*	Structure
1	Knowledge
2	Skill
3	Sensitivity

---

* Responsibility for assignment of this code rests with the interviewer as each interview is recapped on Form 08. As each statement of an enabler is recorded, the appropriate code is entered in Column S. The interviewer records the code that best reflects the interview context in which the statement occurred and the intent of the statement. This code is subject to review and confirmation by the Coding Resolution Team.

APPENDIX 4 (cont'd.)

Category Set T

Self/Others Report (for Enablers)

Set T Coding*	Self/Others Report (for Enablers)
1	Self
2	Others
3	Team

---

* Responsibility for assignment of this code rests with the interviewer as each interview is recapped on Form 08. As each statement of an enabler is recorded, the appropriate Self/Others code is entered in Column T.

Category Set UV

Primary Categories of Enablers

Primary Categories of Knowledge Enablers (Category Set S-1)

Set UV Coding*	Primary Categories (S-1)
01	Standard school subjects
02	Subjects learned in courses
03	Subjects related to RDD&E
04	Technical/professional topics
05	Project focus topics: external
06	Project variables: external
07	Project operation: general
08	Project operation: specific
09	Scheduling & organizing
10	Staff status/responsibilities
11	Fiscal matters
12	Resources: personnel
13	Resources: money
14	Resources: time
16	Guidelines for reporting
17	Writing styles
18	Staff competencies/interests
19	Technical terminology/language
20	Sponsor concerns
21	Management techniques
22	Use of equipment/systems
23	Char's of target audience
24	Process implementation (proj)
25	Sources of info/materials
26	Incorrect data entries/posting
27	Potential field settings
28	Group dyn/decision processes
29	Need for material/info
30	Errors in strategies/judgment

---

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns UV on Form 08 for each statement of an enabling knowledge associated with the output being analyzed.

Primary Categories of Enablers (cont'd.)

Primary Categories of Skill Enablers (Category Set S-2)

Set UV Coding*	Primary Categories (S-2)
01	Teaching
02	Facilitating people interactions
03	Translating content to media
04	Using/applying feedback
05	Programming project events
06	Programming subject matter
07	Programming technical equip
08	Analytical reading/study
09	Analytical problem solving
10	Analytical data handling
11	Disciplining self
12	Disciplining others
13	Listening
14	Writing
15	Presenting orally
16	Using media
17	Interpreting language
18	Finding fits/integrating
19	Planning/conceptualizing
20	Exercising judgment
21	Tracking activities/goals
22	Estimating expenses/resources
23	Persuading/justifying
24	Explicating goals/procedures
25	Applying measurement tools
26	Locating/maintaining info
27	Using equipment/systems
28	Running task oriented meetings
29	Getting others to perform
30	Adapting to situation/demands
31	Taking another's perspective
32	Identifying/correcting errors
33	Graphically illustrating
34	Coordinating activities
35	Communicating clearly
36	Cataloging/classifying
37	Assessing skills/potentials
38	Using resources effectively
39	Constructing measurement tools
40	Defining terms/problems

Primary Categories of Enablers (cont'd.)

Set UV Coding*	Primary Categories (S-2, cont'd.)
41	Maintaining physical condition
42	Eliciting responses
43	Instilling confidence
44	Fiscal accounting
45	Assessing personal performance
46	Placing others at ease
47	Recalling
48	Establishing credibility
49	Interacting productively

---

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns UV on Form 08 for each statement of an enabling skill associated with the output being analyzed.

Primary Categories of Enablers (cont'd.)

Primary Categories of Sensitivity Enablers (Category Set S-3)

Set UV Coding*	Primary Categories (S-3)
01	Values of self and others
02	Capabilities and limitations
03	Needs of self and others
04	Interactions of self & others
05	Context of subject matter
06	Worth in disciplines/methods
07	Context of objectives
08	Worth in objectives
09	Awareness of alternatives
10	Awareness of structure
11	Awareness of method
12	Role of catalyst/synthesizer
13	Language barriers
14	Reality in goal setting
15	Degrees of freedom to deviate
16	Existing value systems
17	Personality of others
18	Potential conflict of interest
19	Supportiveness required
20	Unstated obligations
21	Limitations of analyses/data
22	Responses of target audiences
23	Cost/benefit factors
24	Sources of error
25	Individual differences
26	Recognition of data needs
27	Acceptability of output
28	Admitting error/adapting
29	**Willingness to experiment
30	Response sets of target audiences
31	Nature/scope of output
32	Reality in spending
33	Need for excellence in work
34	**Willingness to accept guidance
35	Need to communicate effectively
36	**Feeling of personal security
37	**Willingness to delegate
38	Emerging directions
39	Limits of "one-shot" efforts
40	Contractual/stated obligations

Primary Categories of Enablers (cont'd.)

Set UV Coding*	Primary Categories (S-3 cont'd.)
41	**Inquisitiveness
42	**Enthusiasm
43	**Challenged by activities
44	**Interested in activities
45	Sound variability
46	**Sense of humor
47	**Willingness to work as needed
48	**Common sense
49	**Willingness to learn
50	**Intellectual openness
51	Possible points of confusion
52	Awareness of staff affect
53	**Creative
54	Manageability of data
55	**Respect for/trust in others
56	**Habit of thoroughness
57	Deadlines
58	**Willingness to support staff

---

* Responsibility for the assignment of this code rests with the Coding Resolution Team. It is recorded in Columns UV on Form 08 for each statement of an enabling sensitivity associated with the output being analyzed.

** Items emerging from data collection, classified as sensitivities, but which appear to be habits or personality characteristics.

APPENDIX 4 (cont'd.)

Category Set W

Output Completion Stage

Set W Coding*	Completion Stage
1	Completed a long time ago (over one year ago)
2	Completed some time ago (three to twelve months ago)
3	Recently completed (within last three months)
4	Currently in process
5	Not yet underway
6	On-going (generally continuous throughout project)

---

* Responsibility for assignment of this code rests with the interview team leader. Determination of completion stage for every output listed for a project is made on site and the appropriate code entered in Column W on Form 05B.

Category Set X

Project Role of Interviewee

Set X Coding*	Project Roles
1	Principal Investigator (contractual responsibility)
2	Project Director (if other than P.I.)
3	Top or intermediate-level project manager or coordinator
4	First-line supervisor (supervising three or more)
5	Member, professional staff
6	Member, clerical support staff
7	Member, technical support staff
8	Advisor or consultant
9	Other

---

* Responsibility for the assignment of this code rests with the interviewer. Determination of role is made as a function of interview, confirmed with interviewee and the appropriate code entered as Item 47 in Questionnaire Form 03.

APPENDIX 4 (cont'd.)

Category Set Y

Project Focus

Set Y Coding*	Project Focus
1	Research (R)
2	Development (D)
3	Diffusion (D)
4	Evaluation (E)

---

* This code to be tentatively given each project prior to site visitation by interview team as a function of site selection. Responsibility for confirming and modifying the code rests with the team leader and the Coding Resolution Team. The code is entered in Column Y on Form 05B.

Category Set Z

Character of Supported Focal Output

Set Z Coding*	Character of Supported Focal Output
1	Knowledge
2	Technology
3	Implementation
4	Information

---

* This code is entered in Column Z on Form 05B. It corresponds to the Category Set C code given the focal output to which it is linked on the output map. Responsibility for this entry rests with the Coding Resolution Team with confirmation by the site visitation team leader.

APPENDIX 5

Decision Rules for Coding Output and Work Requirement Data

APPENDIX 5

Decision Rules for Coding Output and Work Requirement Data

Category Set A: Structure of Output

Purpose of the Classification

The classification of an output according to the structure it represents permits discrimination of outputs having varying degrees of tangibility. (It is recorded in Column A of Form 05B for each output identified in a project and in Cell A of Forms 06, 07, and 08 for each output being analyzed.)

Definitions

Code Structure

1 Product - Something tangible or "hard" produced as an outcome of targeted work effort, concrete in form, and transportable at a given point in time.

Decision rules:
(a) the site or informant provides a copy of the product; or
(b) the site or informant specifies that the output is in physical form or relates to it as such.

Examples: Questionnaire; time line chart; policy manual.

2 Event - An observable transaction or set of behaviors produced as an outcome of targeted work effort.

Decision rules:
(a) the site or informant specifies an occurrence significant to the project toward which there was focused work effort;
(b) the output descriptor clearly states or implies a set or class of behaviors occurring within time and content constraints.

Examples: Field test; conference; workshop; speech.

3 Condition - A desired circumstance expected to endure within the life of a project, or beyond as a result of the project, produced as an outcome of targeted work effort.

Decision rules:
(a) the site or informant specifies an output in phenomenological terms, i.e., in terms descriptive

of a circumstantial characteristic;

(b) the output descriptor refers directly to a characteristic rather than products or events which may lead to it.

Examples: Parent involvement; staff welfare; supportive atmosphere.

Discussion of Category Set A Decision Rules

Criteria for output identification (see Chapter I) interact directly with criteria for classification within this category set, and the terms used to label the outputs identified is critical. For example, "coordinating project activities" suggests the site views a significant output as a process or set of behaviors, hence it is classified as an event. On the other hand, "coordinated project activities" suggests a condition being sought after by a site. Critical to the labeling and classification of this output then, is a sensitivity to the way in which the site or informant views the end (output) being sought.

Category Set B: Levels of Output

Purpose of the Classification

The classification of an output according to the level at which it appears permits distinguishing those that represent ends from those that represent components and those that are facilitative. (It is recorded in Column B on Form 05B for each output identified in a project and in Cell B of Forms 06, 07, and 08 for each output being analyzed.)

Definitions

Code	Level
1	Focal - An outcome of the targeted work effort of a project that is regarded as central to the contractual obligation. (See Glossary)

Decision rules:

(a) the output is clearly identified and specified as a contractual obligation; and

(b) the output is clearly identified and specified as being an end outcome of work effort which may optimize the consequences of the project as a whole.

Examples: of (a): Catalog of objectives; institutes; parent involvement; final report; of (b): Newsletter (for outside distribution); speeches (for dissemination of project as opposed to, e.g., fund generating activity).

Code Level

2 Component - An outcome of targeted work effort that constitutes an identifiable part of or integral ingredient in a focal output.

Decision rules:

(a) the output is not a focal output but is identified as integral part of it; or

(b) the output is a prototype of the focal output which does not fulfill, at that stage, all contractual requirements of the focal output.

Examples: Tryout version of catalog of objectives; measures of objectives achievement (when part of unit).

3 Facilitator - An outcome of targeted work effort that makes easier or assists the accomplishment of other outputs of a project and which is not an instance of a focal or component output.

Decision rules:

(a) the output clearly is not a focal effort of the project, nor can its identity be directly perceived within it;

(b) the output is related to the project in that it makes easier or assists in the performance of a sound, cohesive project operation; or

(c) the output is related to the project in that it makes easier or assists in fulfilling various terms of a contract.

Examples: Any data collection instrument except where instrumentation in that form is explicitly stated as a project focus; timeline chart; staff meeting; atmosphere for constructive criticism.

Discussion of Category Set B Decision Rules

In applying Category Set B classifications to an output, the level *of an output must be viewed in relation to project ends* (the focal outputs); this is as opposed to a "nested-set" view, e.g., staff welfare as a component of staff morale. Having established focal outputs, component outputs are those which consist of significant dimensions or "pieces" of those project ends. Facilitating outputs become, by exclusion, all other outputs relevant to project efforts or concerns. Technical tools of a project, unless specifically stated as outputs to be delivered, are thus considered to be facilitators even though they may be contained in a final report. A final report which merely satisfies accountability requirements of a project, while focal in nature, does not qualify the tools as components in a project sense. On the other hand, if a technical report is identified as a contractual obligation, the tools may well be of a component nature in a project sense. In any event, the purpose is to discriminate those outputs for which direct accountability exists from those which support that accountability.

Category Set C: Output Character

Purpose of the Classification

The classification of an output according to its *character* is to permit one to distinguish outputs on the basis of whether they represent *knowledge*, *technology*, *implementation*, or *information* outcomes. (It is recorded in Column C of Form 05B for each output identified in a project and in Cell C of Forms 06, 07, and 08 for each output being analyzed.)

Definitions

Code	Character
1	*Knowledge* - An outcome of work effort (output) which is viewed as a newly inferred and generalizable idea or principle taken from facts or data, which adds to that which is known and provides a new base from which to view other phenomena.

Decision rules:

(a) the output has the characteristic of having been empirically tested by the project through the process generating it; *and*

(b) the output has the characteristic of an idea, principle, etc., derived from data, or is a report of those things having utility or application beyond the context in which it was generated.

Examples: Nature of reading; conceptual papers (empirically derived and tested); experimental (research) data; data analysis and interpretation (research data).

Code Character

2 Technology - An outcome of work effort which is viewed as a reliable strategy, procedure, hardware, or set of materials designed to bring about a particular outcome or to perform a defined operation.

Decision rules:
(a) the output has the essential characteristic of providing a framework for accomplishing a specified end; and,
(b) the output has the essential characteristic reached as a result of its application.

Examples: A questionnaire; single concept film; field test plan.

3 Implementation - An outcome of work effort which is viewed as an instance of the adoption and/or utilization of knowledge, technology, and/or information.

Decision rules:
(a) the output has the characteristic of transmitting knowledge, information and/or a technology; and,
(b) the output has the characteristic of others adopting and/or utilizing knowledge, information, or technology within certain specified parameters.

Examples: Commercial edition of a catalog of objectives; popular magazine publication supporting a program, final report (when serving accountability and not meeting other criteria).

4 Information - An outcome of work effort which is viewed as trustworthy facts or data descriptive of something without reference to interpretive or value judgments relating to that description.

Decision rules:
(a) the output has the characteristic of having been legitimized through the processes generating it; and,
(b) the output has the characteristic of data, or a report of that

data, having utility or application within the context of its generation.

Examples: Description of resource management system; statistical and reference reports; progress reports; performance testing data; criterion referenced test item pool; normative data; coordinated field-test site data collection.

Discussion of Category Set C Decision Rules

The classification of an output in relation to its character must be based on what the output is. The effort is to determine whether the output, on the basis of what it is (be it product, event, or condition), satisfies requirements (a) and (b) in any single character, i.e., knowledge, technology, implementation or information. If it does, that classification is given the output. Care must be taken to insure that an output is not classified by virtue of the perceived processes which went into its generation, but rather whether it is, in fact, represented as an output having the specified characteristics. Likewise, it is not appropriate to classify an output in terms of a sense of its purpose. Thus, if multiple classifications are seen as possible, a second examination of the output must be made to determine the single classification which best describes what it represents.

Category Set "a": Output Function

Purpose of the Classification

The classification of an output according to its function, i.e., policy, management or production permits examination of the degree to which those who accomplish those outputs correlate with those whose roles are also so designated. (It is recorded in Column a of Form 05B for each output identified in a project.)

Definitions

Output Function - That classification given an output in accordance with the policy setting, management, or production service it renders to the course of project work. (See related definitions for policy, management, and production functions.)

Code	Function
1	Policy - A classification given an outcome of work effort which establishes the principles or guidelines to be attended by a project as a whole.

Decision rules:
(a) the output has the essential characteristic of influence on the project as a whole rather than on any specific set of outputs; and,
(b) the output has the characteristic of setting forth the basic parameters of the project, the guidelines and principles to be attended by overall operations and the resources which may be brought to bear in achieving the desired end.
(c) an arbitrary decision rule excludes project proposals from this classification. (See definition, decision rules, and examples of management oriented outputs in which the typical elements of a proposal appear as management in function.)

Examples: Operational plans and policies; criteria for quality control; seminars on goals to be pursued; organizational management structures; technical paper for new personnel.

Code	Function
2	Management - A classification given an outcome of work which orchestrates resources (time, personnel, materials, space, information) available to a project in the realization of outcomes expected from it, or is a report of that orchestration. (See discussion section for this category set.)

Decision rules:
(a) the output has the essential characteristic of serving information needs with respect to outputs or operations of the project; and/or
(b) the output specifies timelines, budget line items, and/or personnel assignments relative to project operations; and/or
(c) the output has the characteristic of an operational decision affecting project outputs and/or operations, other than those having policy-oriented functions; and/or
(d) the output has the essential characteristic of serving accountability obligations; and/or

(e) the output specifies what is to be produced.

Examples: Final report (accountability); progress/financial reports; questionnaires; observation system; specification of materials; PERT chart; list of sites; quality control schema; journal article; field test data; directory; staff meeting/hiring; acquisition of materials/funds; product quality.

Code	Function
3	Production - A classification given an outcome of work effort which has the characteristic of building directly on the fabrication efforts of a project.

Decision rules:

(a) the output has the essential characteristic of comprising elements of, or are inherent in, the focal outputs being sought, as opposed to those which express or coerce various qualities of them; or

(b) the output has the characteristic of specifying how an output meeting the requirements of (a) is to be achieved (in terms of specific, discrete behaviors as opposed to sets of behaviors).

(c) focal outputs having contractual characteristics, along with component outputs, receive this classification, as do facilitating outputs meeting the requirements of (b).

Examples: Single concept film; parent involvement (where such is proclaimed to be a focal or component element contractually defined); research report; conference (where that is a contracted-for element of the effort); test data (where it is contracted for as in evaluation or research efforts); work conference; coordinated curriculum.

Discussion of Category Set "a" Decision Rules

The classification of an output in relation to its function must be based on what an output does in relation to the overall goals of a specified effort irrespective of the roles of those accomplishing them. Central to this classification is the assumption that outputs, in and of themselves, serve either a policy, management, or production function relative to the objectives of an effort. In this respect, many outputs (e.g., field test instruments, observation systems, etc.) have traditionally been thought of as elements of production efforts, and the tendency may be to classify them as having production functions. However, where the function of such outputs is, for example, clearly to provide for quality characteristics of another output, and nothing more, the classification must be "management." Identical outputs may have, then, different functions in different projects or efforts depending upon the ends being sought. Care must be taken to examine critically the contribution of each output independently from other classifications and traditional ways of thinking about production activity in the larger sense. Successfully classifying the functions of outputs in this manner permits, in part, such analyses as how the standards, tasks, or enablers (see definitions) may vary for identical outputs when they serve different functions, and how management output responsibilities are distributed among management and other working personnel.

Category Set DE: Output Cluster Categories

Purpose of the Classification

The classification of outputs to clusters facilitates retrieval of large amounts of information relative to those outputs having general qualities in common. (It is recorded in Columns DE of Form 05B for each output identified in a project and in Cells DE of Forms 06, 07, and 08 for each output being analyzed.)

Definitions

Output Cluster Category - A classification given an outcome of work effort which identifies it as one of a number of different outputs having certain general qualities in common.

Decision Rules:

(a) the output has the characteristic usually associated with one of the output types listed in Category Set DE (see Appendix 4); and

(b) the output has the characteristic of essentially serving the operation implied by one of the output categories listed therein; or

(c) the output is the basis for establishing a new output cluster category not otherwise represented in the DE set, and a new classification number is established for the output.

(d) the decision to add cluster categories is dependent upon the level of specificity desired in analyzing clusters of outputs, keeping in mind the Category Set FGHI represents categories of outputs at a specific level.

Examples: Reports/contracts would include "final report," "personal services contract," "interim report," "progress report," etc. (See DE and FGHI Categories in Appendix 4 for complete listing.)

Discussion of Category Set DE Decision Rules

In the development of Category Set DE, consideration is given to outputs as they appear to have operational similarities. Further, the set is to facilitate retrieval of data on large numbers of outputs having similar gross characteristics which are of interest to trainers. Thus the set serves not only as another means of classifying an output, but also as an index for easy access to meaningful clusters of output data. The first decision to be made in classifying an output as to its cluster category involves determining whether, in the context in which it was created, it has an operational relationship to any of the clusters listed. It will be noted that there are mutually exclusive clusters for each output structure (i.e., product, event, and condition). If an operational relationship exists and is easily identified, that classification is given. If uncertain choices exist between two or more clusters, careful examination of categories listed within the set may clarify the classification. Should it be decided a new cluster category is represented, care should be taken to establish a cluster label at a gross enough level to permit other different outputs having like operational characteristics to be classified within it. The label must, however, be specific enough to preclude its confusion with other clusters already established.

Category Set FGHI: Primary Output Categories

Purpose of the Classification

The classification of outputs according to a primary category, allows for retrieval of all information relative to specific aggregated outputs, each of which reflects relatively identical features and elements. (It is recorded in Columns FGHI of Form 05B for each output identified in a project and in Cells FGHI of Forms 06, 07, and 08 for each output being analyzed.)

Definitions

Primary Output Category - A basic classification given an output in which the category assigned reflects the fundamental and essential elements which mark the output as unique. Thus it is, for all practical purposes, a statement.

Decision rules:

(a) the output has all the identifiable characteristics usually associated with one of the categories listed in Category Set FGHI; and

(b) the category being considered for classifying the output contains the same set of qualifiers in its description as does the output; or

(c) the output is considered to have characterisitics or qualifiers which, as a set, makes the output different from any of those in the category list, and a new primary category is created.

(d) the decision to add an output to the primary category list is dependent on whether, for all practical purposes, there is an exact match of characteristics and qualifiers between the items being classified and any of those already contained in the Category Set. Difference in level of descriptive detail in the output and Category label is sufficient to warrant a new item.

Examples: Questionnaire is different from attitude questionnaire; single concept film is different from film strip, slide film; a slide film on parts of speech is different from a slide film on the alphabet; a progress report is different from an interim report, etc.

Discussion of Category Set FGHI Decision Rules

In the development of Category Set FGHI, consideration is given to outputs as they appear to have operational differences. Further, this set is to represent a listing of the specific and discrete outputs as identified by project personnel, irrespective of level of explicitness, in order that the data collected for those analyzed maintain specific output integrity. Care must be taken in classifying an output to an existing category, or in deciding to add a new category, to examine the characteristics of the output per se, rather than the tasks involved in accomplishing it. The reason for this is that the manner in which different people see the tasks necessary to accomplish an identical output may vary resulting in the tasks being stated differently. Following this principle permits the generation of an increasingly complete range of data relative to specific outputs. In addition, should one choose to utilize alternative clusterings different from the DE Category Set, the outputs listed are discrete at the level described, and may be reclustered at face value.

Category Set J: Structure Categories of Standards

Purpose of the Classification

The classification of a standard by the structure category it represents permits discriminating those standards by which people judge the adequacy of an output from those standards by which people judge the adequacy of processes and/or operations involved with the accomplishment of that output. (It is recorded in Column J of Form 06 for each statement of a standard associated with the output being analyzed.)

Definitions

Structure of a standard - The characteristics of a statement of a standard which identify it as a measure of the adequacy of an output or as measure of the adequacy of processes associated with the accomplishment of that output.

Code	Structure Category
1	Output Standard - A specific criterion applied to, or level of excellence expected of, a particular output, i.e., a criterion by which the adequacy of an output is judged.

Decision rules:

(a) the standard has the characteristic of referring to an output in terms of a level of performance expected of it; or

(b) the standard has the characteristic of referring to an ouput in terms of the nature of its composition.

Examples: "Consistency in output performance."
"Successfully constraints/guides an implementation/production effort."
"Compliance of output with sponsor guidelines."

APPENDIX 5 (cont'd.)

"Terminology appropriate for target (must refer to terms)."

Code	Structure Category
2	Process/Operations Standard - A criterion applied to, or level of excellence expected of, the processes and/or operations conducted in the achievement of an output, i.e., a criterion by which the adequacy of the processes and/or operations relating to achieving an output are judged.

Decision rules:

(a) the standard has the characteristic of referring to the processes and/or operations involved with achieving an output in terms of a level of performance expected from them; or

(b) the standard has the characteristic of referring to an output performance as a measure of the adequacy of the processes or operations which went into its achievement. (Discussion of Category Set J has special relevance to this criterion.)

Examples: "Adequate operations conducted within budget."
"Manner of personnel performance fosters respect."
"Minimum redoing/debugging/correcting required."
"Follow-on proposals are funded."
"Feedback occurs."

Discussion of Category Set J Decision Rules

The ability to discriminate between those standards which relate to an output and those which relate to the processes and/or operations conducted in creating that output is occasionally difficult unless the object of the standard is specified. (The recap statements are to include sufficient information to indicate to which structure category the standard has reference.) Where similar standards are used to judge the output as well as the processes, the primary categories (Category Set LM) for each are worded differently in order to facilitate proper identification of the structure category represented. To that extent, the listings of standards within each of the related LM sets may be used as additional examples for making this discrimination.

Category Set K: Self/Others Report for Standards

Purpose of the Classification

The self/others classification for standards permits discriminating those standards which are perceived to be imposed on an output by those other than the individual providing the increments of data being sought about an output. (It is recorded in Column K of Form 06 for each statement of a standard associated with the output being analyzed.)

Definitions

Code	Self/Others Report for Standards
1	Self (reported by interviewee as a standard he holds for the output being judged and/or the work performed in its production).
2	Others (reported by interviewee as a standard held by others which is relevant to the output being judged and/or the work performed in its production).
3	Team (reported by interviewee as a standard held by the interviewee and others as relevant to the output being judged and/or the combined efforts in its production).

Discussion of Category Set K

The coding represented by this category set must be made by the interviewer or individual recapping audio-tapes of interview on the basis of the interview protocol. Instructions to interviewers specify that it must be clear whether the standard reported by the interviewee is held essentially by himself, others, or himself and others as a team.

Category Set LM: Standards

Purpose of the Classification

The purpose of this category set is to quantify the various standards expressed for outputs, including the various ways or levels of specificity with which they are expressed, and the frequencies with which they are cited. Such quantification of standards held for each output facilitates analysis of the manner in which various standards may distribute across outputs of differing classes, levels, foci, and functions. (The classification is recorded in Columns LM of Form 06 for each statement of a standard associated with the output being analyzed.)

Definitions

Standard - A specific criterion applied to, level of excellence expected of, or a criterion by which judgments of adequacy are made about an output or the processes associated with its generation.

Decision rules:

(a) the standard, as expressed, must correspond for all intents and purposes with the meaning and level of detail of one of the items in Category Set LM; or

(b) the standard, as expressed, does not correspond in meaning and level of detail with any of the items and is added to the appropriate structure category (Set J) list.

Examples: Primary category "Terminology Appropriate" includes: "the words are right for the target ..."; 'the terms used convey the right meaning ..."; Primary category "Feedback Occurs" includes: "people respond (to questions, etc.)"; "people provide constructive criticism."

Discussion of Category Set LM Decision Rules

The level of detail being sought for a statement of a standard may well be greater than that which informants can provide readily. Care must be taken to examine a statement carefully with respect to its intended meaning before choosing to select or add a category. Where doubt exists, it is usually profitable to discuss the meaning with the informant (where coding is taking place on site) or the interviewer who collected the data. Also, it is essential, to the extent possible to avoid inferences about the meaning. Occasionally statements will appear that contain more than one of the elements listed in the category set. In this case, it is permissible to paraphrase the statement into separate items and code each independently, since it is the elements that are important.

APPENDIX 5 (cont'd.)

Category Set NO: Cluster Categories of Tasks

Purpose of the Classification

The classification of tasks to cluster categories attends to two factors involved with the handling of information coming from a context having infinite variations. Of primary consideration in making this classification is the clustering of wide ranging task statements according to general process characteristics which they appear to have in common. Secondarily, the labels given such qualities provides an index which facilitates both the reduction and storage of task data in a systematic fashion. (The classification is recorded in Columns NO of Form 07 for each task statement associated with the output being analyzed.)

Definitions

Task Cluster Category - A classification given a task statement which identifies it as one of a number of different tasks having certain general qualities in common.

Decision rules:

(a) the task statement clearly serves the process characteristic described by a single task cluster category; or

(b) a single cluster category set contains within it a task description which matches the task statement (when there is doubt about a choice between two or more major categories); or

(c) it is determined no appropriate cluster category exists and a new one is established and given an initial label thought to best represent the general process characteristic implied by the task statement.

Examples: Clarifying the Problem: includes "Specify the variables to be studied"; "identify contaminating variables"; "review problem-related literature," etc. Procuring Professional Staff: includes "analyze work for competencies required"; "determine competencies available; obtain approval to hire," etc. (See NO and QR Categories in Appendix 4 for complete listings.)

APPENDIX 5 (cont'd.)

Discussion of Category Set NO Decision Rules

This category set is designed to accept new clusters of tasks as they become apparent. In so doing it must be remembered that each set established will be considered mutually exclusive from any other. Occasionally, as with quality control tasks, different general process characteristics may be represented. It is therefore essential that all NO and QR sets be examined before determining a need for a new cluster.

Note also that there is a break in the NO Category Set numbering which separates production tasks from those tasks which relate to manipulation of processes and/or operations. Should a new cluster category set be established, it must be listed within the appropriate subset. Production tasks are those perceived to relate to outputs which are essentially the object of project efforts, while process and/or operations tasks are those which are perceived to provide resources and a quality environment for the project as a whole. (The primary use of the two subsets of clusters is as an index to existing clusters which facilitates coding efforts. Subsequent verification of the integrity of the items coded to each subset would permit analyses to be done on output vs. process/operations tasks.

Category Set P: Self/Others Report for Tasks

Purpose of the Classification

The self/others classification for tasks permits identification of those tasks, reported necessary in the achievement of an output, which are performed by the interviewee, others, or the interviewee and others as a team. (The classification is recorded in Column P of Form 07 for task statement associated with the output being analyzed.)

Definitions

Code	Self/Others Report for Tasks
1	Self (reported by interviewee as relevant to his own work on the output).
2	Others (reported by interviewee as relevant to the work performed on the output by other project personnel, but not as performed by the interviewee).
3	Team (reported by interviewee as relevant to the combined efforts of his own work on the output and the concurrent work of others).

Discussion of Category Set P

The coding represented by this category set must be made by the interviewer, or individual recapping audio-tapes of interview, on the basis of the interview protocol. Instructions to interviewers specify that it must be clear whether each task reported by the interviewee is performed essentially by himself, others, or himself and others as a team.

Category Set QR: Primary Categories of Tasks

Purpose of the Classification

The purpose of this category set is to quantify the various tasks associated with achieving an output, including the various ways or levels of specificity in which they are expressed, and the frequencies with which they are cited. Such quantification of tasks performed for each output permits identification of the manner in which various tasks may distribute across outputs of differing classes, levels, foci, and functions. (The classification is recorded in Columns QR of Form 07 for each task statement associated with the output being analyzed.)

Definitions

Primary Task Category - A basic classification given a discrete unit of work in which the classification reflects the fundamental and essential elements which mark that unit as a unique step in the accomplishment of an output. (See discussion section for elaboration of the elements of this definition.)

Decision rules:

(a) the general behavior inherent in a task statement corresponds in level (included elements), action, and target of that action to that reflected by a single primary task category listed in the existing sets (Set QR); or

(b) the task, as expressed does not correspond as in (a), and is added to the appropriate task cluster category (Set NO) listing.

Examples: "Negotiate quality issues with sponsor" is different from "negotiate contract"; "making a decision" is different from "determining key decision points," etc. These differences are the basis for determining the match of a statement to a primary category. (See Category Sets NO and QR in Appendix 4 for a complete listing of cluster and primary task categories established to date.)

Discussion of Category Set QR Decision Rules

Time and space does not permit consideration of all possible problems in the handling and classifying of "task" data. Indeed, the infinite variations in the level of detail possible to elicit from various respondents without risking interviewer biasing of the data being gained (inappropriate leading questions) suggests the most meaningful discussion should center on the principles involved.

First, an elaboration of the term "task" seems appropriate. In content, a task is generally said to describe worker activity. It is a unit of activity that deals with the methods, procedures, and techniques by which outputs are produced. A task is a discrete unit of work performed by an individual or individuals where there is a definite beginning and ending within a limited period of time (albeit a reiterative instance of). It is not so finite as to constitute a single homogeneous action of the worker (e.g., "I pick up the pencil"), but it is a composite of such homogeneous actions which describe meaningful units of work performed. A "meaningful" unit is described as that level of detail it is possible to elicit from a given informant without the statement assuming a "homogeneous action" characteristic.

Given this definition, then, classification of raw task statements involves either matching it to an existing primary category in terms of its level and obvious inclusions, or failing in that, adding it to the appropriate category listing as a new primary category. The addition of an item must be done with care and in keeping with the practical aspects of meaningful overlap and redundancy of information. (Subsequent analyses of data, at given future points in time may permit collapsing and rewording of some categories to eliminate unnecessary redundancies.)

Category Set S: Structure Categories of Enablers

Purpose of the Classification

The classification of enablers into structure categories permits the initial clustering of broad ranging enabler statements according to characteristics they have in common. (The classification is recorded in Column S of Form 08 for each enabler statement associated with the output being analyzed.)

APPENDIX 5 (cont'd.)

Definitions

Structure of an enabler - The characteristics of an enabler statement which identify it as representing a requisite knowledge, requisite process skill, or requisite sensitivity in the accomplishment of an output.

Code Structure Category

1 Knowledge - An instance of that which must be known or known about as a requisite to the successful accomplishment of an output.

Decision rules:

(a) the statement refers to something that one needs to know in order to accomplish an output; or

(b) the statement refers to something that one needs to know how to do in order to accomplish an output.

Examples:
"Know the objectives."
"Know what teachers are asked to do."
"Know the professional language."
"Know how to budget."
"Know statistics."

2 Skill - A specific ability, proficiency or expertness considered requisite to the successful accomplishment of an output.

Decision rules:

(a) the statement refers to a process in which one must have some degree of ability in order to successfully accomplish an output.

(b) the statement refers to an expertness which one must possess in the application and/or utilization of resources or enabling knowledges and sensitivities brought to bear on achieving an output.

Examples:
"Ability to visualize the overall operation."
"Ability to administer tests."
"Ability to adapt to a situation."
"Ability to exercise judgment and make decisions."

3 Sensitivity - A specific perceptiveness and responsiveness

considered requisite to the successful accomplishment of an output.

Decision rules:

(a) the statement refers to a need to have a sense or awareness of a phenomenon, condition or "state of affairs" in the environment; and/or

(b) the statement implies, directly or indirectly, an awareness of the need to be responsive to such phenomena, conditions, or states; or

(c) the statement refers to an attitude one must have relative to an implied phenomenon, condition, or state.

Examples: "Sensitive to the limitations of others."
"Sense of reality in establishing goals."
"Awareness of alternative courses of action."
"Aware of the affective qualities of an output."
"Willingness to experiment or hypothesize."
"Willingness to accept guidance."

Discussion of Category Set S Decision Rules

For present purposes, the category set includes three structure categories. The decision to add another may depend on the phenomenon upon which one chooses to focus, e.g., attitudes or personality characteristics as discrete from sensitivities. In any event, the parameters for classifying enablers within three structure categories have proven reasonably exhaustive to date. It must be noted that it is conceivable any enabler statement classified according to one structure category criterion (e.g., knowledge) could, in fact, have a skill and sensitivity counterpart. In the mapping effort conducted, this possibility was hypothesized, but in keeping with the data-dependency criteria for the creation of a category it was not presumed to exist until it appeared. For that reason, there are similarities between knowledges, skills, and sensitivities in terms of the objects of their attention. The language and intent of a statement must, therefore, be clearly understood before classifying it as representing one of the three. In keeping with the logic of development of the detailed enabler sets (Set UV), it is imperative that this classification (Set S) be made independently from the primary categories included within each.

APPENDIX 5 (cont'd.)

Category Set T: Self/Others Report for Enablers

Purpose of the Classification

The self/others classifications for enablers permits identifying the manner in which enablers distribute across people in accomplishing outputs of differing classes, levels, foci, and functions. (The classification is recorded in Column T of Form 08 for each enabler statement associated with the output being analyzed.)

Definitions

Code	Self/Others Report for Enablers
1	Self (reported by interviewee as relevant to his own work on the output).
2	Others (reported by interviewee as relevant to the work performed on the output by other project personnel, but not as performed by the interviewee).
3	Team (reported by interviewee as relevant to the combined efforts of his own work on the output and the concurrent work of others).

Discussion of Category Set T

The coding represented by this category set must be made by the interviewer, or the individual recapping audio-tapes of interview, on the basis of interview protocol. Instructions to interviewers specify that it must be clear whether the enabler reported by the interviewee is a requisite he must have in the performance of his work relative to an output, or one others must have in relation to him and the same output.

Category Set UV: Primary Categories of Enablers

Purpose of the Classification

The purpose of this category set is to quantify the various enablers associated with achieving an output, including the various ways or levels of specificity in which they are expressed, and the frequencies with which they are cited. Such quantification of enablers permits identification of the manner in which various enablers may distribute across outputs of differing classes, levels, foci, and functions. (The classification is recorded in Columns UV of Form 08 for each enabler statement associated with the output being analyzed.)

Definitions

Enabler - That which provides the ability, means, opportunity, power or authority to successfully accomplish an output. For the present data enablers are ordered by knowledge, skill, and sensitivity categories (Category Set S).

Decision rules:

(a) the statement refers to a knowledge, skill, or sensitivity (Category Set S) which matches the level or inclusions within each set implied by an item;

or

(b) the statement does not meet the requirements of (a) and is added as an item to the listing within the major category set. (See next section for critical discussion.)

Examples: Knowledge of project objectives is different from knowledge of similar efforts; skill in "writing" is different from "communicating clearly"; sensitivity to "value systems" is different from sensitivity to "potential conflicts of interest." Such differences are the basis for determining the exact match of a statement to a primary category. (See Category Sets S and UV for detailed listing of categories established to date.)

Discussion of Category Set UV Decision Rules

Of all the category sets which could be established for a data collection effort, the enabler set is perhaps the most vulnerable to vagaries of reality, particularly in relation to knowledge factors. While other sets attend to factors which occur within the defined parameters of educational RDD&E, enablers can originate or be derived from any world of experience. For that reason, the present enabler category set must be perceived to be in a formative, prototype state of development and less refined than other sets. Items within the knowledge set, for example, begin by discriminating on the basis of the domains or disciplines of content represented by a statement, with substantive meaning depending on the retrieval of the raw statements. Other items within the same set were explicated when they did not appear to represent a content item of another discipline (e.g., English, theories of learning, computer technology, etc.). The decision to explicate items for addition to the listings may well depend on the focus of the effort.

Subsequent analysis of the present data would include content analysis of raw statements linked to, e.g., "Subjects primarily related to RDD&E," and the knowledge listing expanded accordingly.

In the case of skills and sensitivities, the listings are more clearly substantive and directly represent the levels at which informants were able to express them. In any event, the principle involved is to examine all primary categories (within the appropriate structure category) and a raw statement in terms of:

(a) the degree to which they most nearly match;

(b) the level of meaning (or utility) required of a category in order to attend to the objectives of the data collection effort;

(c) a sense of the number of variations within a variable that it is reasonable to assume one can meaningfully handle.

Category Set W: Output Completion Stage

Purpose of the Classification

This classification is made to permit identification of the degree to which data obtained relative to a given output is current in nature, i.e., whether it is generally retrospective, current, or projected data. This in turn permits one to control for "currency of perception" factors when sampling as well as to subsequently examine differences in retrospective data as opposed to current or projected impressions. (The classification is recorded in Column W of Form 05B for each output identified in a project.)

Definitions

Code	Output Completion Stage
1	Completed a long time ago (over one year ago).
2	Completed some time ago (three to twelve months ago).
3	Recently completed (within last three months).
4	Currently in process (outputs having defined completion points; see Code 6).
5	Not yet underway.

6	On-going (generally continuous throughout project, e.g., staff morale).

Discussion of Category Set W

The definitions for these classifications generally seem self-explanatory. Codes 4 and 6 discriminate between those outputs currently being attended but which have defined beginning and ending points and those outputs which are attended continuously throughout the life of a project or effort.

Category Set X: Project Role of Interviewee

Purpose of the Classification

The classification of each interviewee by the role with which he is most closely identified within a project permits an analysis of the manner in which work activities and work requirements of people and the outputs they produce, may vary across projects and project roles. (This classification is recorded as Item 47 in Questionnaire Form 03 for each project staff member.)

Definitions

Code	Project Roles
1	Principal Investigator (contractual responsibility)
2	Project Director (if other than Principal Investigator)
3	Top (or intermediate-level) Project Manager or Coordinator (other than P.I. or P.D.)
4	First-line Supervisor (supervising three or more project staff members)
5	Member, Professional Staff (of the project)
6	Member, Clerical Support Staff (of the project)
7	Member, Technical Support Staff (of the project)
8	Advisor or Consultant (to the project)
9	Other

Discussion of Category Set X

These categories seem essentially self-explanatory. However, at the closing out of an interview contact with an informant, the interviewer must carefully discuss with him each of the project role categories. Determination of the classification to be given the informant must be based on which category best characterizes the primary responsibilities of his role, keeping in mind the manner in which the role is viewed by others. The interviewer may assist in the classification through expressing his own impressions of the informant's role (based on insights from interview) but, in any event, the classification ultimately made must be agreed to as best reflecting the role held.

Category Set Y: Project Focus

Purpose of the Classification

The classification of a project according to its primary *focus* permits examination of the manner in which outputs having separate *character* classifications distribute across projects of differing foci. This classification is reported and recorded for each output of a project in Column Y of Form 05B.

Definitions

Code *Focus*

1 *Research* - An outcome of *project* effort in which the *primary* goal of the effort is viewed as the achievement of an idea, principle, theory, or law that can be shown to be generalizable through empirical verification.

Decision rules:
(a) the primary outcome of the project has the characteristic of having been conceived and empirically tested by the project through the process generating it; *and*
(b) the outcome has the characteristic of an idea, principle, etc., derived from data, or is a report of those things, having utility or application beyond the context in which it was generated.

Examples: Nature of reading; conceptual papers (empirically derived and tested); experimental (research) data; data analysis and interpretation (research data).

2 *Development* - An outcome of *project* effort in which the primary goal of the effort is viewed as the achievement of a reliable technology, that is, procedures, materials, hardware, and organizational frameworks that when applied can bring about a desired outcome or perform a defined operation.

APPENDIX 5 (cont'd.)

Decision rules:
(a) the outcome has the essential characteristic of providing a framework for accomplishing a specified end; and
(b) the outcome has the essential characteristic of making explicit an end which may be reached as a result of its application.

Examples: An instructional system; data management system; total observation system.

Code	Focus
3	Diffusion - An outcome of project effort in which the primary goal of the effort is viewed as bringing about the adoption and utilization of knowledge, information and/or technology.

Decision rules:
(a) the outcome has the characteristic of transmitting knowledge, technology, and/or information; and
(b) the outcome is one of others having adopted and/or utilized information or technology within certain specified parameters.

Examples: Commercial edition of a catalog of objectives; popular magazine publication supporting a program; final report (when serving accountability and not meeting other-focus criteria).

4 Evaluation - An outcome of project effort in which the primary goal of the effort is viewed as the production of trustworthy information regarding a phenomenon which occurs in a context or environment over which the user of the information expects to exercise influence or about which he expects to make decisions.

Decision rules:
(a) the outcome has the characteristic of having been legitimized through the processes generating it; and
(b) the outcome has the characteristic of data, or a report of that data, having utility or application within the context of its generation.

Examples: Statistical and reference reports; performance testing data; criterion referenced test item pool; normative data.

Discussion of Category Set Y Decision Rules

This classification is relatively straigntforward as long as a project or defined operation has a single focus in relation to contract or obligation. However, there are efforts in which there are clearly multiple contractual obligations, e.g., some obligations require the provision of evaluative data, and at the same time, the development of an evaluative technology that can be used in other contexts. In other projects multiple thrusts of research for the sake of new knowledge is coupled with the development of new means to achieve special learning outcomes. In such cases, the decision for providing the project focus classification to a project is based on the determination of a single, primary or superordinate focus of the project. This determination may be extremely difficult, at times, and is guided by the following considerations:

(a) the elements used to define the total effort as a "project," as mutually agreed upon with project personnel;

(b) the relative frequency the character classifications of focal outputs, such character classifications interpreted as the outputs of specific foci;

(c) in the absence of discrimination on the basis of (a) and/or (b), the relative weighting of resources and perceived priorities of staff;

(d) the classification ultimately in keeping with the terms of the definitions of each project focus described above.

It must be noted that this classification is, in some cases, a forced one serving a very gross purpose. The reader is referred to Category Set Z in which the classification scheme deliberately accounts for multiple foci within projects. The classification in the present instance is closely tied to site selection criteria and may, in fact, influence either the selection of sites or the parameters used to define the "project." For example, in an on-going operation involving any or all of RDD&E and in the absence of other criteria which may define it, one may choose to describe the "project" parameters to be studied in terms of a single focus such as the Evaluation effort.

In any event, Category Set Y requires identification of a single, primary focus. When the analysis made possible by this classification is not desired, Category Set Z makes possible a similar analysis based strictly on any separate focal points of project efforts.

APPENDIX 5 (cont'd.)

Category Set Z: Character of Supported Focal Output

Purpose of the Classification

The classification of each output according to the *character of the* focal output for which it is accomplished is to provide a means of identifying the manner in which the *character* of those outputs vary within focal outputs having separate *character* classifications.

Definitions

Code	Character of Supported Focal Output	
1	Knowledge	(See Category Set C)
2	Technology	" " " "
3	Implementation	" " " "
4	Information	" " " "

Discussion of Category Set Z Coding

This classification is relatively straightforward in that it is merely transcribing the *Category Set C* code given the focal output to which the output in question contributes. Where the "Z" code is being considered for a focal output, its own "C" code is used. (See Category Set C for definitions and decision rules.) In some instances an output may contribute, in different ways, to more than one focal output. When this is the case, a judgment must be made regarding which focal output is *most dependent* for its accomplishment on the output in question. Output maps and other interview data described elsewhere in this volume provide information relative to this dependency factor.

APPENDIX 6

Computer Program Listing

- RDDE7
- ISO
- LIMIT
- HEADER
- MEAN4
- PRECON
- TABLEF
- SORT

Computer Program Listing

```
OS3 FORTRAN  VERSION 2.1             02/28/72  1718
      PROGRAM RDDE7
C-----PROGRAM PERFORMS SELECTED SORTS AND TABLES SELECTED VARIABLES
C
      COMMON/DATA/NN(7),INPD(7,2),LIM(234)
C-----ARRAY NN DEFINES NO. OF VARIABLES AT EACH LEVEL
      DATA(NN=35,47,17,99,12,12,12)
C-----ARRAY INPD DEFINES LUN NUMBERS FOR DATA SETS.  LEVELS 1,2,3,AND 4
C     USE UNIQUE DATA SETS.  LEVELS 5,6,AND 7 USE TWO DATA SETS EACH.
C     FIRST SET ORDERED BY OUTPUT NUMBER WITHIN PERSONNEL NUMBER WITHIN
C     PROJECT NUMBER(J=1),AND SECOND SET BY PERSONNEL NUMBER WITHIN OUT-
C     PUT NUMBER WITHIN PROJECT NUMBER(J=2).
C     PROGRAM CONTROL INFO. ON LUN 45
C     OUTPUT ON LUN 46
C     MONITOR ON LUN 47
      DATA(((INPD(I,J),I=1,7),J=1,2)=34,35,36,37,38,39,40,
     134,35,36,37,31,32,33)
C-----DEFINES MAX. VAR. VALUES FOR LEVEL 1
      DATA((LIM(I),I=1,35)=25,4,6,9,4,5,4,12,71,8,10,6,6,3,9,99,99,62,67
     1,7,7,9,9,13,12,10,4,25,10,5,5,4,3,5,3)
C-----DEFINES MAX. VALUES LEVEL 2
      DATA((LIM(I),I=36,82)=25,20,100,2,3,9,4,5,12,12,7,35,25,22,10,17,
     122,17,25,19,75,40,99,50,81,60,7,8,8,9,210,210,210,210,210,210,210,
     2210,210,210,210,210,210,210,210,10,10)
C-----DEFINES MAX. VALUES LEVEL 3
      DATA((LIM(I),I=83,99)=25,210,576,6,3,3,4,18,16,14,14,52,336,4,4,
     14,3)
C-----DEFINES MAX. VALUES LEVEL 4
      DATA((LIM(I),I=100,198)=25,20,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,
     18,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,
     28,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,8,
     38,8,8,8,8,8,8,8,8,8,8,8,30)
C-----DEFINES MAX. VALUES LEVEL 5
      DATA((LIM(I),I=199,210)=25,20,210,65,3,3,4,52,336,2,3,46)
C-----DEFINES MAX. VALUES LEVEL 6
      DATA((LIM(I),I=211,222)=25,20,210,71,3,3,4,52,336,33,3,32)
C-----DEFINES MAX. VALUES LEVEL 7
      DATA((LIM(I),I=223,234)=25,20,210,65,3,3,4,52,336,3,3,58)
C-----IVAR:ARRAY STORES VARIABLE ID NUMBERS FOR REAL SORT
C     LEVEL:ARRAY STORES WITHIN VARIABLE LEVEL NUMBER FOR REAL SORT
      DIMENSION IVAR(50),LEVEL(50)
C-----DEFINE DATA RECORD SCRATCH LUN  FOR TABLES
      ISCR=44
C-----WRITE HEADER ON MONITOR LUN
      WRITE(47,10)
C-----INITIALIZE COUNTERS,FLAGS
      LSORT=NDS=LSORT1=0
  100 ISKP=1
      NTBL=ICRS1=0
C-----READ ALPHANUMERIC TABLE HEADER
      CALL HEADER(NTBL,LSORT,NDS,1)
C-----INCREMENT DATA SET COUNTER
      NDS=NDS+1
C-----WRITE DATA SET NUMBER  ON OUTPUT LUN
      WRITE(46,16)NDS
C-----READ CONTROL INFORMATION FOR NEXT LEVEL TO BE SORTED
  110 READ(45,11)LSORT1,MSORT,LUNTBL,ICRS,IOP4
      IF(EOF(45))STOP
  120 LSORT=LSORT1
C-----IF NEW DATA SET (LSORT=0) GO TO 100
      IF(LSORT.EQ.0)GO TO 100
```

```
OS3 FORTRAN  VERSION 2.1  RDDE7     02/28/72  1718
  C-----DEFINE SCRATCH INPUT LUN FOR THIS LEVEL
        IF(ICRS.EQ.2)ICRS1=1
        INPS=42
        IF(ICRS.LE.1.AND.LSORT.LE.3)INPS=41
        IF(INPS.EQ.41)ICRS1=0
        IF(ICRS1.EQ.1.AND.LSORT.GT.3)INPS=43
  C-----IF SORT LEVEL >3 GO TO 130
        IF(LSORT.GT.3)GO TO 130
  C-----DEFINE SCRATCH OUTPUT LUN FOR THIS LEVEL
        ISKP=1
        IOUT=42
        IF(LSORT.EQ.1)IOUT=41
        IF(ICRS.EQ.2)IOUT=43
    130 NVAR=0
  C-----GO TO 150 IF ≠NOMINAL≠ SORT
        IF(MSORT.LE.0)GO TO 150
  C-----READ NO. OF VAR/LEVELS,TO SORT; THEN VARIABLE/LEVEL COMBINATIONS
        READ(45,12)NVAR,(IVAR(I),LEVEL(I),I=1,NVAR)
  C-----CALL SORTING SUBROUTINE
    150 CALL SORT(INPD(LSORT,ISKP),INPS,IOUT,ISCR,NVAR,IVAR,LEVEL,LSORT,
       1LUNTBL,NREC,ISKP,ICRS,IOP4,NDS)
  C-----IF NO RECORDS MEET CRITERION GO TO 160
        IF(NREC.LE.0)GO TO 160
  C-----WRITE MONITOR INFORMATION
        WRITE(47,13)NDS,LSORT,ICRS,NVAR,NREC
  C-----IF TABLES TO BE MADE CALL TABLING ROUTINE
        IF(LUNTBL.GT.0)CALL TABLEF(ISCR,LSORT,LUNTBL,NTBL,NDS)
  C-----IF MEANS-PERCENTAGES ANALYSIS DESIRED CALL ROUTINE
        IF(IOP4.GT.0.AND.LSORT.EQ.4)CALL MEAN4(ISCR,LSORT,NDS)
        GO TO 110
  C----- WRITE ≠NO RECORD≠ INFORMATION ON OUTPUT LUN AND MONITOR LUN
    160 WRITE(46,14)NDS,LSORT,ICRS,NVAR
        WRITE(47,14)NDS,LSORT,ICRS,NVAR
  C-----IF SORT LEVEL > 3 GO TO 110
        IF(LSORT.GT.3)GO TO 110
  C-----READ NEXT HEADER RECORD FOR SORT LEVEL
    170 READ(45,11)LSORT1,MSORT,LUNTBL,ICRS
        IF(EOF(45))STOP
  C-----IF NEW SORT LEVEL <= ≠NO RECORD≠ SORT LEVEL GO TO 120
        IF(LSORT1.LE.LSORT)GO TO 120
        NVAR=0
  C-----IF NOMINAL SORT GO TO 180
        IF(MSORT.LE.0)GO TO 180
  C-----READ NUMBER OF VAR./LEVELS, VARIABLE/LEVEL COMBINATIONS
        READ(45,12)NVAR,(IVAR(I),LEVEL(I),I=1,NVAR)
  C-----WRITE MONITOR INFORMATION ON OUTPUT LUN AND MONITOR LUN
    180 WRITE(46,15)NDS,LSORT1,NVAR
        WRITE(47,15)NDS,LSORT1,NVAR
        GO TO 170
     10 FORMAT(≠1  DATA SET≠,2X,≠  SORT LEVEL  ≠,2X,≠  CRS  ≠,2X,≠VARIABLE
       1/LEVELS ≠,2X,≠ NO. OF RECORDS ≠,//)
     11 FORMAT(5I2)
     12 FORMAT(21I3,/,(20I3))
     13 FORMAT(I6,7X,I6,8X,I4,4X,I8,11X,I8)
     14 FORMAT(≠1   NO RECORDS,  DATA SET ≠,I5,/,≠0≠,14X,≠SORT LEVEL ≠,I6,
       1/,≠0≠,14X,≠CRS ≠,I6,/,≠0≠,14X,≠NO. OF VARIABLE/LEVELS ≠,I8)
     15 FORMAT(≠0  DELETED, DATA SET ≠,I6,≠ SORT LEVEL ≠,I5,≠ NO. OF VARI≠
       1,≠ABLE/LEVELS ≠,I5)
     16 FORMAT(≠1≠,80(≠*≠),/,≠0   DATA SET  ≠,I5,/,≠0≠,80(≠*≠))
        END
```

```
OS3 FORTRAN  VERSION 2.1            02/28/72  1718
        FUNCTION ISO(II,JJ,KK,IR,IC)
C-----COMPUTES SUBSCRIPT VALUES FOR CONVERTING 1,2,OR 3 DIMENSICNS INTO
C       A SINGLE DIMENSION WITH ZERO AS THE ORIGIN
C       II:ROW SUBSCRIPT VALUE
C       JJ:COLUMN SUBSCRIPT
C       KK:LEVEL SUBSCRIPT
C       IR:NUMBER OF ROWS
C       IC:NUMBER OF COL.
C-----COMPUTE SUBSCRIPT
        ISO=KK*IR*IC+JJ*IR+II+1
        RETURN
        END

  NO ERRORS FOR ISO

P 00052   C 00000   D 00000
```

```
OS3 FORTRAN  VERSION 2.1            02/28/72  1718
      FUNCTION LIMIT(I,J)
C-----RETURNS NO. OF CATEGORIES FOR LEVEL I, VARIABLE J
C     ARRAY ILM:NO. OF VARIABLES AT EACH LEVEL
C     ARRAY IQ:DUMMY
C     ARRAY LIM:NO. OF CATEGORIES FOR EACH VARIABLE
      COMMON/DATA/ILM(7),IQ(14),LIM(234)
C-----SET DO LOOP LIMIT
      II1=I-1
C-----SET COUNTER TO ZERO
      ILIM=0
C-----IF LEVEL 1 GO TO 120
      IF(II1.LE.0)GO TO 120
C-----COMPUTE NO. OF VAR. IN LEVELS 1 TO I-1
      DO 110 II=1,II1
  110 ILIM=ILIM+ILM(II)
C-----ADD VAR. NO.,GIVES SUBSCRIPT IN ARRAY LIM
  120 ILIM=ILIM+J
C-----DETERMINE NO. OF CAT.
      LIMIT=LIM(ILIM)
      RETURN
      END

 NO ERRORS FOR LIMIT

P 00067   C 00000   D 00377
```

```
OS3 FORTRAN  VERSION 2.1                02/28/72  1718
      SUBROUTINE HEADER(NTBL,LSORT,NDS,IRD)
C-----READ HEADER ARRAY IF IRD > 0
C-----WRITE TABLE HEADER IF IRD <= 0
C-----NTBL:TABLE NUMBER COUNTER
C     LSORT:LEVEL OF SORT
C     NDS:DATA SET NUMBER
C     IRD:READ OR WRITE FLAG
C-----ARRAY ID STORES ALPHA NUMERIC HEADER FOR PRINTER OUTPUT
      DIMENSION ID(30)
C-----GO TO 100 TO WRITE HEADER
      IF(IRD.LE.0)GO TO 100
      READ(45,11)ID
      RETURN
  100 WRITE(46,10)ID,NDS,LSORT,NTBL
   10 FORMAT(≠1≠,30A4,/,≠0 DATA SET  ≠,I4,5X,≠ SORT LEVEL  ≠,I4,5X,≠
     1TABLE NUMBER ≠,I6/)
   11 FORMAT(30A4)
      RETURN
      END

 NO ERRORS FOR HEADER

P 00153   C 00000   D 00000
```

```
OS3 FORTRAN  VERSION 2.1  MEAN4     02/28/72  1718
  C-----WRITE NO. OF RECORDS, MEANS, S.D.≠S,PERCENTAGES, NO. OF NO RESPONSESMN4 61
        WRITE(46,10)YN,(I,SUM(I),SUM2(I),XN(I),PCT(I),XNR(I),I=1,95)          MN4 62
     10 FORMAT(≠0  FORM 04 SUMMARY≠,/,≠0  TOTAL NUMBER OF RECORDS≠,F8.0,      MN4 63
       1/,≠0  MEAN, S.D., PERCENT ZERO RESPONSES, PERCENT RESPONSES >3, ≠,   MN4 64
       2≠AND NUMBER OF NO RESPONSES≠,///,95(I5,4F10.3,F8.0//))                MN4 65
        RETURN                                                                MN4 66
        END                                                                   MN4 67

 NO ERRORS FOR MEAN4

P 02534   C 00000   D 00000
```

```
OS3 FORTRAN  VERSION 2.1           02/28/72  1718
      SUBROUTINE MEAN4(LUN,LSORT,NDS)
C-----COMPUTES MEANS AND S.D.≠S; PERCENT ZERO RESPONSES; AND PERCENT >3
C     RESPONSES FOR 95 ITEMS AT LEVEL 4
C     LUN:LUN NO. FOR INPUT RECORDS
C     LSORT:SORT LEVEL
C     NDS:DATA SET NUMBER
      DIMENSION SUM(95),SUM2(95),XN(95),PCT(95),JVAR(99),XNR(95)
      NTBL=1
C-----WRITE OUTPUT ID ARRAY
      CALL HEADER(NTBL,LSORT,NDS,0)
      REWIND LUN
C-----INITIALIZE VARIABLES
      YN=0.
      DO 90 I=1,95
   90 SUM(I)=SUM2(I)=XN(I)=XNR(I)=PCT(I)=0.
C-----READ DATA RECORD
  100 READ(LUN)JVAR
C-----IF EOF GO TO 135
      IF(EOF(LUN))GO TO 135
C-----INCREMENT RECORD COUNTER
      YN=YN+1.
      DO 130 I=5,98
C-----COMPUTE SUBSCRIPT
      K=I-4
C-----INCREMENT NO RESPONSE COUNTER IF JVAR(I)>7
      IF(JVAR(I).GT.7)XNR(K)=XNR(K)+1.
C-----IF NO RESPONSE GO TO 130
      IF(JVAR(I).GT.7)GO TO 130
C-----ACCUMULATE SUM
      SUM(K)=SUM(K)+JVAR(I)
C-----ACCUMULATE SUM OF SQUARES
      SUM2(K)=SUM2(K)+JVAR(I)*JVAR(I)
C-----INCREMENT ZERO COUNTER IF JVAR <=0
      IF(JVAR(I).LE.0)XN(K)=XN(K)+1.
C-----INCREMENT >3 COUNTER IF JVAR IS 4,5,6,7
      IF(JVAR(I).GT.3.AND.JVAR(I).LT.8)PCT(K)=PCT(K)+1.
  130 CONTINUE
      SUM(95)=SUM(95)+JVAR(99)
      SUM2(95)=SUM2(95)+JVAR(99)*JVAR(99)
      IF(JVAR(99).LT.1)XNR(95)=XNR(95)+1.
      GO TO 100
C-----COMPUTE MEANS, S.D.≠S,PERCENTAGES
  135 DO 140 K=1,94
C-----COMPUTE NO. NONZERO RESPONSES
      ZN=YN-XNR(K)
C-----COMPUTE S.D.
      SUM2(K)=SQRTF((SUM2(K)-SUM(K)*SUM(K)/ZN)/(ZN-1.))
C-----COMPUTE MEAN
      SUM(K)=SUM(K)/ZN
C-----COMPUTE PERCENT >3
      PCT(K)=PCT(K)/ZN*100.
C-----COMPUTE PERCENT ZERO RESPONSES
      XN(K)=XN(K)/ZN*100.
  140 CONTINUE
C-----COMPUTE NO.RESPNSES FOR VAR.95
      ZN=YN-XNR(95)
C-----COMPUTE S.D
      SUM2(95)=SQRTF((SUM2(95)-SUM(95)*SUM(95)/ZN)/(ZN-1.))
C-----COMPUTE MEAN
      SUM(95)=SUM(95)/ZN
```

```
OS3 FORTRAN  VERSION 2.1  PRECON    02/18/72  1308
  C      ENABLER ON RECAP PAGE                                         PRE121
         DO 540 I=1,20                                                 PRE122
         IF(JVAR(1,I).LE.0.AND.I.GT.1)GO TO 540                        PRE123
         N2=N2+1                                                       PRE124
         DO 530 J=1,3                                                  PRE125
         K=J+9                                                         PRE126
         IF(JVAR(J,I).GT.MAX(K))MAX(K)=JVAR(J,I)                       PRE127
     530 KVAR(K)=JVAR(J,I)                                             PRE128
  C-----WRITE OUTPUT RECORD                                            PRE129
         WRITE(IOUT)(KVAR(K),K=1,12)                                   PRE130
     540 CONTINUE                                                      PRE131
         GO TO 510                                                     PRE132
     550 ENDFILE IOUT                                                  PRE133
         WRITE(61,17)LEVEL,N1,N2,(MAX(I),I=1,12)                       PRE134
      17 FORMAT(3I5,/,≠0≠12I5)                                         PRE135
         GO TO 90                                                      PRE136
  C-----CONVERT LEVEL 6 AND FIND MAX. VALUES                           PRE137
     600 DO 605 I=1,12                                                 PRE138
     605 MAX(I)=0                                                      PRE139
         N1=N2=0                                                       PRE140
     610 READ(INP,18)(IVAR(I),I=1,9),((JVAR(J,K),J=1,3),K=1,20)        PRE141
      18 FORMAT(3I3,I2,3I1,I2,I4,20(I2,I1,I2))                         PRE142
         IF(EOF(INP))GO TO 650                                         PRE143
         N1=N1+1                                                       PRE144
         DO 620 I=1,9                                                  PRE145
         IF(IVAR(I).GT.MAX(I))MAX(I)=IVAR(I)                           PRE146
     620 KVAR(I)=IVAR(I)                                               PRE147
         DO 640 I=1,20                                                 PRE148
         IF(JVAR(1,I).LE.0.AND.I.GT.1)GO TO 640                        PRE149
         N2=N2+1                                                       PRE150
         DO 630 J=1,3                                                  PRE151
         K=J+9                                                         PRE152
         IF(JVAR(J,I).GT.MAX(K))MAX(K)=JVAR(J,I)                       PRE153
     630 KVAR(K)=JVAR(J,I)                                             PRE154
         WRITE(IOUT)(KVAR(K),K=1,12)                                   PRE155
     640 CONTINUE                                                      PRE156
         GO TO 610                                                     PRE157
     650 ENDFILE IOUT                                                  PRE158
         WRITE(61,17)LEVEL,N1,N2,(MAX(I),I=1,12)                       PRE159
         GO TO 90                                                      PRE160
         END                                                           PRE161

NO ERRORS FOR PRECON

P 02305   C 00000   D 00122
```

```
OS3 FORTRAN  VERSION 2.1  PRECON    02/18/72  1308
      DO 220 I=1,47
      IS=IS2(I)
      IF(IVAR(IS).LE.MAX(I))GO TO 220
      MAX(I)=IVAR(IS)
  220 KVAR(I)=IVAR(IS)
      WRITE(IOUT)(KVAR(I),I=1,47)
      GO TO 210
  250 ENDFILE IOUT
      WRITE(61,12)LEVEL,N1,(MAX(I),I=1,47)
      GO TO 90
C-----CONVERT LEVEL 3 AND FIND MAX. VALUES
  300 DO 305 I=1,17
  305 MAX(I)=0
      N1=0
  310 READ(INP,14)(IVAR(I),I=1,17)
   14 FORMAT(3I3,4I1,4I3,I2,I4,4I1)
      IF(EOF(INP))GO TO 350
      N1=N1+1
      DO 320 I=1,17
      IF(IVAR(I).GT.MAX(I))MAX(I)=IVAR(I)
  320 CONTINUE
      WRITE(IOUT)(IVAR(I),I=1,17)
      GO TO 310
  350 ENDFILE IOUT
      WRITE(61,12)LEVEL,N1,(MAX(I),I=1,17)
      GO TO 90
C-----CONVERT LEVEL 4 AND FIND MAX. VALUES
  400 DO 405 I=1,99
  405 MAX(I)=0
      N1=0
  410 READ(INP,15)(IVAR(I),I=1,99)
   15 FORMAT(2I3,2I2,94I1,I2)
      IF(EOF(INP))GO TO 450
      N1=N1+1
      DO 420 I=1,99
      IF(MAX(I).LE.IVAR(I))MAX(I)=IVAR(I)
  420 CONTINUE
      WRITE(IOUT)(IVAR(I),I=1,99)
      GO TO 410
  450 ENDFILE IOUT
      WRITE(61,12)LEVEL,N1,(MAX(I),I=1,99)
      GO TO 90
C-----CONVERT AND EXPAND LEVELS 5 OR 7 AND FIND MAX. VALUES
C     INITIALIZE MAX ARRAY
  500 DO 505 I=1,12
  505 MAX(I)=0
C-----INITIALIZE RECORDS READ(N1) AND RECORDS PRODUCED(N2)COUNTERS
      N1=N2=0
C-----HEADER INFO IN IVAR, STANDARDS OR ENABLER DATA FROM SAME
C     RECAP PAGE IN JVAR
  510 READ(INP,16)(IVAR(I),I=1,9),((JVAR(J,K),J=1,3),K=1,20)
   16 FORMAT(3I3,I2,3I1,I2,I4,20(2I1,I2))
      IF(EOF(INP))GO TO 550
C-----INCREMENT RECORDS READ COUNTER
      N1=N1+1
C-----FIND HEADER MAX. VALUES
      DO 520 I=1,9
      IF(IVAR(I).GT.MAX(I))MAX(I)=IVAR(I)
  520 KVAR(I)=IVAR(I)
C-----FIND MAX. VALUES FOR VARIABLES 10,11,12 FOR EACH STANDARD OR
```

```
OS3 FORTRAN  VERSION 2.1             02/18/72  1308
      PROGRAM PRECON
C-----PROGRAM CONVERTS DATA FOR A SPECIFIC LEVEL FROM BCD TO BINARY
C     FOR USE IN PROGRAM RODE7
C     IVAR: INPUT ARRAY FOR LEVELS 1,2,3,4,5,6,7
C     JVAR:INPUT ARRAY FOR LEVELS 5,6,7
C     KVAR:OUTPUT ARRAY FOR LEVELS 1,2,5,6,7
C     MAX:STORAGE ARRAY FOR MAX. VALUES OF EACH VARIABLE
C-----CONTROL INFORMATION ON LUN 45, MAX VALUES PRINTED ON LUN 61
      DIMENSION IVAR(135),JVAR(3,20),KVAR(47),MAX(99)
      COMMON/DATA/IS1(35),IS2(47)
C-----IS1:ARRAY DEFINES VARIABLES TO BE WRITTEN AS BINARY SORT RECORD
C     FOR LEVEL 1
      DATA((IS1(I),I=1,35)=1,2,3,4,6,7,8,9,10,11,12,13,14,24,25,29,30,
     133,34,37,38,41,42,45,46,49,51,53,55,57,59,61,63,64,65)
C-----IS2:ARRAY DEFINES VARIABLES FOR LEVEL 2
      DATA((IS2(I),I=1,47)=1,2,3,4,5,6,7,8,9,10,14,22,23,24,25,26,27,28,
     129,30,31,32,33,34,64,77,109,110,111,112,113,114,115,116,117,118,
     2119,120,121,122,123,124,125,126,127,134,135)
C-----READ LEVEL TO BE CONVERTED, INPUT LUN,OUTPUT LUN
   90 READ(45,10)LEVEL,INP,IOUT
   10 FORMAT(3I2)
      IF(EOF(45))STOP
      REWIND INP
      REWIND IOUT
      GO TO(100,200,300,400,500,600,500)LEVEL
C-----CONVERT LEVEL 1 AND PRINT MAX. VALUES
C     INITIALIZE ARRAY MAX
  100 DO 105 I=1,35
  105 MAX(I)=0
C-----INITIALIZE RECORD COUNTER
      N1=0
C-----READ INPUT DATA RECORD
  110 READ(INP,11)(IVAR(I),I=1,65)
   11 FORMAT(I3,3I1,I2,3I1,4I2,3I1,8I3,2I1,3I3,35I2,2I1)
      IF(EOF(INP))GO TO 150
C-----INCREMENT RECORD COUNTER
      N1=N1+1
C-----STORE APPROPRIATE VARIABLES AND FIND MAX VALUES
      DO 120 I=1,35
      IS=IS1(I)
      IF(IVAR(IS).LE.MAX(I))GO TO 120
      MAX(I)=IVAR(IS)
  120 KVAR(I)=IVAR(IS)
C-----WRITE OUTPUT RECORD IN BINARY
      WRITE(IOUT)(KVAR(I),I=1,35)
      GO TO 110
C-----WRITE FILE MARK, MAX. VALUES
  150 ENDFILE IOUT
      WRITE(61,12)LEVEL,N1,(MAX(I),I=1,35)
   12 FORMAT(2I5,/,(≠ ≠10I4))
      GO TO 90
C-----CONVERT LEVEL 2 AND FIND MAX VALUES
  200 DO 205 I=1,47
  205 MAX(I)=0
      N1=0
  210 READ(INP,13)(IVAR(I),I=1,135)
   13 FORMAT(I3,I2,I3,5I1,5I2,8I1,18I2,24I1,I2,12I1,I2/
     15X34I1,I2,15I3,6I2,2I1)
      IF(EOF(INP))GO TO 250
      N1=N1+1
```

```
OS3 FORTRAN  VERSION 2.1  TABLEF    02/28/72  1718
   150 IF(IOP1.GT.0)GO TO 190
  C-----IF 1 DIM. COL. TABLE GO TO 160
       IF(IVAR2.LE.0)GO TO 160
  C-----WRITE ROW AND COL. IDENTIFIERS
       WRITE(46,13)IVAR1,IVAR2,IZ,(JJ,JJ=1,ICT)
       GO TO 170
  C-----WRITE 1 DIM. IDENTIFIER ON OUTPUT
   160 WRITE(46,14)IVAR1
  C-----SET ROW COUNTER TO ZERO
   170 I=0
  C-----COMPUTE SUBSCRIPT FOR ROW TOTAL
   175 IP2=ISO(I,ICT,K,IRT1,ICT1)
  C-----IF ROW TOT. <= 0 GO TO 180
       IF(ITBL(IP2).LE.0)GO TO 180
  C-----COMPUTE SUBSCRIPT FOR FIRST CELL IN LEVEL
       IP1=ISO(I,0,K,IRT1,ICT1)
  C-----WRITE ROW NUMBER, TABLE VALUES FOR ROW I
       WRITE(46,15)I,(ITBL(JJ),JJ=IP1,IP2,IRT1)
  C-----INCREMENT ROW COUNTER
   180 I=I+1
  C-----IF MORE ROWS GO TO 175
       IF(I.LE.IRT)GO TO 175
       GO TO 200
  C-----SINGLE DIMENSION ROW DISPLAY
  C     COMPUTE SUBSCRIPT OF FIRST ARRAY LOCATION
   190 IP1=ISO(0,ICT,K,IRT1,ICT1)
  C-----COMPUTE SUBSCRIPT OF LAST ARRAY LOCATION
       IP2=ISO(IRT,ICT,K,IRT1,ICT1)
  C-----COMPUTE NO. OF CATEGORIES
       IP=IP2-IP1+1
  C-----DETERMINE LENGTH OF FIRST ROW
       IP=MIN0(IP,21)
       IPL=IP-1
  C-----WRITE VARIABLE ID AND CAT. NO. FOR FIRST LINE
       WRITE(46,16)IVAR1,IZ,(JJ,JJ=1,IPL)
  C-----WRITE TABLE VALUES
       WRITE(46,19)(ITBL(JJ),JJ=IP1,IP)
  C-----COMPUTE FIRST SUBSCRIPT FOR SECOND LINE
       IP1=IP1+21
  C-----IF START OF SECOND LINE > LAST ARRAY SUBSCRIPT GO TO 100
   195 IF(IP1.GT.IP2)GO TO 100
  C-----COMPUTE START POINT OF SECOND LINE CAT. NO.
       IPS=IPL+1
  C-----COMPUTE NO. OF CAT. REMAINING
       IP=IP2-IP1+1
  C-----IF NO. LEFT > 20, SET FLAG AT 20
       IP=MIN0(IP,20)
  C-----COMPUTE LAST VALUE FOR CATEGORY NUMBERS FOR THIS LINE
       IPL=IPS+IP-1
  C-----COMPUTE LAST SUBSCRIPT FO ARRAY IN THIS LINE
       IP=IP+IP1-1
  C-----WRITE CAT. ID NUMBERS
       WRITE(46,20)(JJ,JJ=IPS,IPL)
  C-----WRITE TABLE VALUES FOR THIS LINE
       WRITE(46,21)(ITBL(JJ),JJ=IP1,IP)
  C-----COMPUTE SUBSCRIPT FOR TABLE VALUES  TO START NEXT LINE
       IP1=IP1+20
       GO TO 195
  C-----INCREMENT LEVEL COUNTER
   200 K=K+1
```

```
OS3 FORTRAN  VERSION 2.1  TABLEF    02/28/72  1718
  120 READ(IDATA)(JVAR(J),J=1,NV)
C-----IF EOF GO TO 130
      IF(EOF(IDATA))GO TO 130
C-----DETERMINE ROW SUBSCRIPT VALUE
      JV1=JVAR(IVAR1)
      JV2=JV3=0
C-----IF AT LEAST TWO DIM. DETERMINE COL. SUBSCRIPT
      IF(IVAR2.LE.0)GO TO 125
      JV2=JVAR(IVAR2)
C-----IF 3 DIM. DETERMINE LEVEL SUBSCRIPT
      IF(IVAR3.LE.0)GO TO 125
      JV3=JVAR(IVAR3)
C-----COMPUTE SINGLE DIMENSION SUBSCRIPTS
C     COMPUTE CELL SUBSCRIPT
  125 IP=ISO(JV1,JV2,JV3,IRT1,ICT1)
C-----INCREMENT CELL FREQUENCY
      ITBL(IP)=ITBL(IP)+1
C-----IF 1 DIM. ,SET SUBSCRIPT TO VALUE FOR COL. TOT. CELL
      IF(ICT.LE.0)JV1=IRT
C-----COMPUTE SUBSCRIPT FOR ROW TOTAL
      IP=ISO(JV1,ICT,JV3,IRT1,ICT1)
      ITBL(IP)=ITBL(IP)+1
C-----IF 1 DIM. GO TO 120
      IF(ICT.LE.0)GO TO 120
C-----COMPUTE SUBSCRIPT FOR COL. TOTAL
      IP=ISO(IRT,JV2,JV3,IRT1,ICT1)
      ITBL(IP)=ITBL(IP)+1
C-----COMPUTE SUBSCRIPT FOR GRAND TOTAL(2 DIM.) OR LEVEL TOTAL(3 DIM.)
      IP=ISO(IRT,ICT,JV3,IRT1,ICT1)
      ITBL(IP)=ITBL(IP)+1
C-----IF 2 DIM. TABLE OR TOTAL LEVEL NOT DESIRED(IOP2<0) IN 3 DIM.
C     GO TO 120
      IF(ILT*IOP2.LE.0)GO TO 120
C-----COMPUTE SUBSCRIPT FOR GRAND TOTAL OVER LEVELS
      IP=ISO(IRT,ICT,ILT,IRT1,ICT1)
      ITBL(IP)=ITBL(IP)+1
C-----SUBSCRIPT FOR CELL IN TOT. LEVEL
      IP=ISO(JV1,JV2,ILT,IRT1,ICT1)
      ITBL(IP)=ITBL(IP)+1
C-----ROW TOT. IN TOT. LEVEL
      IP=ISO(JV1,ICT,ILT,IRT1,ICT1)
      ITBL(IP)=ITBL(IP)+1
C-----COL. TOT. IN TOT. LEVEL
      IP=ISO(IRT,JV2,ILT,IRT1,ICT1)
      ITBL(IP)=ITBL(IP)+1
      GO TO 120
C-----PRINT TABLES SECTION
C-----PRINT TABLE ID ARRAY
  130 CALL HEADER(NTBL,LSORT,NDS,0)
C-----SET LEVEL COUNTER TO ZERO
      K=0
C-----IF NOT 3 DIM. TABLE GO TO 150
      IF(IVAR3.LE.0)GO TO 150
C-----COMPUTE SUBSCRIPT FOR LEVEL GRAND TOTAL
  140 IP1=ISO(IRT,ICT,K,IRT1,ICT1)
C-----IF TOTAL <= ZERO GO TO 200
      IF(ITBL(IP1).LE.0)GO TO 200
C-----WRITE LEVEL IDENTIFIERS ON OUTPUT LUN
      WRITE(46,12)K,IVAR3
C-----IF 1 DIM. ROW TABLE GO TO 190
```

```
OS3 FORTRAN  VERSION 2.1            02/28/72  1718
      SUBROUTINE TABLEF(IDATA,LSORT,LUNTBL,NTBL,NDS)
C-----THIS ROUTINE TAKES THE DATA RECORD OUTPUT FROM THE SORT ROUTINE
C     AND PRODUCES CONTINGENCY TABLES OF ONE, TWO, OR THREE DIMENSIONS
C-----IDATA:LUN OF SCRATCH DATA RECORDS
C     LSORT:LEVEL OF SORT
C     LUNTBL:LUN OF TABLE CONTROL INFO.
C     NTBL:TABLE NUMBER COUNTER
C     NDS:DATA SET NUMBER
C-----ARRAY NN:NUMBER OF VARIABLES AT EACH LEVEL
C     ARRAY LIM:LARGEST VALUE OF EVERY VARIABLE
C     ARRAY IQ:DUMMY ARRAY
      COMMON/DATA/NN(7),IQ(14),LIM(234)
C-----ARRAY ITBL:ARRAY FOR STORAGE OF CONTINGENCY TABLE
C     ARRAY JVAR:INPUT RECORD STORAGE
      DIMENSION ITBL(25000),JVAR(99)
C-----REWIND TABLE CONTROL LUN
      REWIND LUNTBL
C-----READ VARIABLE AND OPTION VALUES FOR TABLE
  100 READ(LUNTBL,10)IVAR1,IVAR2,IVAR3,IOP1,IOP2
C-----RETURN IF EOF
      IF(EOF(LUNTBL))RETURN
C-----SET COLUMN AND ROW SIZE LIMITS AND DUMMY VARIABLE TO ZERO
      ICT=ILT=IZ=0
C-----INCREMENT TABLE COUNTER
      NTBL=NTBL+1
      IF(IVAR1.GT.0)GO TO 105
C-----PRINT ERROR MESSAGE AND HEADER ON OUTPUT LUN
      CALL HEADER(NTBL,LSORT,NDS,0)
      WRITE(46,11)
      GO TO 100
C-----WRITE ERROR MESSAGE FOR TABLES DELETED DUE TO ARRAY BOUNDS ERROR
C     FOR ITBL
  103 WRITE(46,22)LSORT,IVAR1,IVAR2,IVAR3,IZERO,NDS
   22 FORMAT(≠1  TABLES DELETED, LEVEL≠,I5,/,≠0 VARIABLES ≠,3I6,/,
     1≠0    IZERO =≠,I10,/,≠0  DATA SET NUMBER ≠,I6)
      GO TO 100
C-----FIND MAX. CATEGORY VALUE FOR VAR.1(ROWS)
  105 IRT=LIMIT(LSORT,IVAR1)+1
C-----IF 2 DIM. TABLE FIND MAX. CAT. VALUE FOR COL.
      IF(IVAR2.GT.0)ICT=LIMIT(LSORT,IVAR2)+1
C-----IF 3 DIM. TABLE FIND MAX. CAT. VALUE FOR LEVELS
      IF(IVAR3.GT.0)ILT=LIMIT(LSORT,IVAR3)+1
C-----COMPUTE NO. OF COL. INCLUDING ROW TOTAL COL.
      IRT1=IRT+1
C-----COMPUTE NO. OF ROWS INCLUDING COL.TOTAL ROW
      ICT1=ICT+1
C-----COMPUTE NO. OF LEVELS INCLUDING OVER-LEVELS TOTAL LEVEL
      ILT1=ILT+1
C-----COMPUTE NUMBER OF CELLS NEEDED IN TABLE ARRAY
      IZERO=IRT1*ICT1*ILT1
C-----IF REQUEST EXCEEDS ARRAY BOUNDS GO TO 103
      IF(IZERO.GT.25000)GO TO 103
C-----CLEAR TABLE ARRAY
      DO 110 I=1,IZERO
  110 ITBL(I)=0
C-----REWIND DATA RECORD SCRATCH LUN
      REWIND IDATA
C-----DEFINE NUMBER OF VARIABLES AT THIS LEVEL OF SORT
      NV=NN(LSORT)
C-----READ DATA RECORD
```

```
OS3 FORTRAN  VERSION 2.1  TABLEF    02/28/72  1718
  C-----IF MORE LEVELS GO TO 140                                            TBL181
        IF(K.LE.ILT)GO TO 140                                               TBL182
        GO TO 100                                                           TBL183
     10 FORMAT(10I3)                                                        TBL184
     11 FORMAT(≠1    TABLES DELETED. ERROR IN CONTROL CARDS.                TBL185
       1 ROW VARIABLE <= 0≠)                                                TBL186
     12 FORMAT(≠0     LEVEL ≠,I4,≠   OF VARIABLE ≠I4/)                      TBL187
     13 FORMAT(≠0   VARIABLE ≠,I4,≠  IS ROWS≠,/,≠     VARIABLE ≠,I4,≠  IS   TBL188
       1COLUMNS≠,/,≠0≠,10X20I6,/,(≠ ≠,16X,19I6/))                           TBL189
     14 FORMAT(≠0   VARIABLE ≠,I4/)                                         TBL190
     15 FORMAT(≠0≠,4X,21I6,/,(≠ ≠,16X,19I6/))                               TBL191
     16 FORMAT(≠0    VARIABLE ≠,I4,/,(≠0≠,4X,21I6))                         TBL192
     19 FORMAT(≠ ≠,4X,21I6,/,(≠ ≠,16X,19I6/))                               TBL193
     20 FORMAT(≠0≠,10X,20I6)                                                TBL194
     21 FORMAT(≠ ≠,10X,20I6)                                                TBL195
        END                                                                 TBL196

 NO ERRORS FOR TABLEF

 P 62272   C 00000   D 00377
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```
OS3 FORTRAN  VERSION 2.1              02/28/72  1718
      SUBROUTINE SORT(IDATA,INP,IOUT,ISCR,NVAR,IVAR,LEVEL,LSORT,
     1MSORT,NREC,ISKP,ICRS,IOP4,NDS)
C-----SUBROUTINE SORT SELECTS RECORDS ON THE BASIS OF USER SUPPLIED
C     CRITERION(REAL SORT) AND/OR INFORMATION PROVIDED FROM SORTS AT
C     PREVIOUS LEVELS(NOMINAL SORT). ROUTINE WRITES COMPLETE DATA RECORDS
C     ON LUN ISCR FOR USE BY TABLING ROUTINE AND WRITES PARTIAL RECORDS
C     ON LUN IOUT FOR USE IN SORTING SUBSEQUENT LEVELS
C-----IDATA:LUN OF DATA RECORDS TO BE SORTED
C     INP:LUN OF SCRATCH SORT ID RECORDS
C     IOUT:LUN OF SCRATCH SORT ID RECORDS FOR NEXT LEVEL
C     ISCR:LUN OF SCRATCH DATA RECORDS FOR TABLING ROUTINE
C     NVAR:NUMBER OF VAR./LEVEL COMBINATIONS FOR REAL SORT
C     IVAR:STORAGE ARRAY FOR VARIABLE NUMBERS
C     LEVEL:STORAGE ARRAY FOR WITHIN VARIABLE LEVEL NUMBERS
C     LSORT:LEVEL OF SORT
C     MSORT:TABLING INDICATOR
C     ISKP:SKIP INDICATOR =2 WHEN SORTING FROM LEVEL 3, =1 OTHERWISE
C     ICRS:INDICATES ORDER OF CROSS SORT BETWEEN LEVELS 2 AND 3
C     IOP4:INDICATOR FOR MEANS AND PERCENTAGE ANALYSIS FOR LEVEL 4
      COMMON/DATA/NN(7)
C-----NO:STORES ID INFO. NEEDED FOR SORTING
C     JVAR:INPUT ARRAY FOR DATA RECORD
C     LVAR:STORES OUTPUT NUMBERS OR PERSONNEL NUMBERS WHEN CROSS
C     SORTING LEVELS 2 AND 3
      DIMENSION IVAR(50),LEVEL(50),NO(4),JVAR(99),LVAR(220)
      REWIND IDATA$REWIND INP$REWIND ISCR$REWINDIOUT
C-----INITIALIZE STORAGE AND FLAGS
      IGRP=0
      EOFM=0.
      DO 80 I=1,220
   80 LVAR(I)=0
C-----INITIALIZE RECORD COUNTER,NO. OF VAR. READ FROM INP, AND LARGEST
C     INDEX NUMBER OF VAR. USED IN ID CHECK
      NREC=LS1=LS11=0
C-----WRITE SORT INFORMATION ON OUTPUT LUN
C     IF NOMINAL SORT GO TO 70
      IF(NVAR.LE.0)GO TO 70
      WRITE(46,10)NDS,LSORT,ICRS,NVAR,(IVAR(J),LEVEL(J),J=1,NVAR)
   10 FORMAT(≠1 DATA SET ≠,I3,5X,≠ SORT LEVEL ≠,I5,5X,≠ ICRS ≠,I5,
     15X,≠ NUMBER OF VARIABLE/LEVELS≠,I5,/,≠0 VARIABLE    LEVEL  ≠,/,
     250(I7,4X,I7/))
      GO TO 75
   70 WRITE(46,11)NDS,LSORT,ICRS
   11 FORMAT(≠1 DATA SET ≠,I3,5X,≠ SORT LEVEL ≠,I5,5X,≠ ICRS ≠,I5,5X,
     1///,≠            ******  NOMINAL SORT  ******≠)
C-----IF FIRST LEVEL GO TO 90
   75 IF(LSORT.LE.1)GO TO 90
C-----DEFINE, NO. OF VAR.READ FROM SORT LUN(LS1),AND LARGEST
C     INDEX NO.OF VAR. USED IN ID CHECK
      LS1=1
      IF(ICRS.EQ.2)LS1=2
      LS11=ICRS
      IF(ICRS.EQ.0)LS11=1
      IF(LSORT.LT.4)GO TO 90
      LS1=2
      LS11=2
      IF(ISKP.EQ.2)LS11=3
C-----DEFINE NO. OF VAR. PER DATA RECORD
   90 NV=NN(LSORT)
C-----INITIALIZE CHECK VALUES
```

```
OS3 FORTRAN  VERSION 2.1  SORT      02/28/72  1718
      KVAR=KVAR1=NO(1)=0
C-----READ DATA RECORD
  100 READ(IDATA)(JVAR(J),J=1,NV)
      IF(EOF(IDATA))GO TO 200
C-----IF LEVEL 1 REAL SORT GO TO 130
      IF(LS1.LE.0.AND.NVAR.GT.0)GO TO 130
C-----IF LEVEL 1 NOMINAL SORT GO TO 160
      IF(LS1.LE.0)GO TO 160
C-----IF FIRST DATA RECORD GO TO 180
      IF(NO(1).LE.0)GO TO 180
C-----INITIALIZE COUNTER
  105 KK=0
C-----ID CHECK: COMPARE DATA RECORD ID TO SCRATCH INPUT RECORD ID
      DO 110 I=1,LS11,ISKP
      KK=KK+1
      IF(JVAR(I).LT.NO(KK))GO TO 100
      IF(JVAR(I).GT.NO(KK))GO TO 180
  110 CONTINUE
C-----IF NOMINAL SORT GO TO 160
      IF(NVAR.LE.0)GO TO 160
  130 KVAR1=NV1=NV2=0
C-----VARIABLE SORT: CHECK DATA RECORD AGAINST ALL VAR./LEVEL COMBINATIONS
      DO 150 I=1,NVAR
      KVAR=IVAR(I)
C-----IF SAME VARIABLE AGAIN GO TO 140
      IF(KVAR.EQ.KVAR1)GO TO 140
C-----IF RECORD DOESN≠T MATCH GO TO 100
      IF(NV1.NE.NV2)GO TO 100
      KVAR1=KVAR
C-----INCREMENT VARIABLE COUNTER
      NV1=NV1+1
C-----IF NO MATCH BETWEEN DATA VALUE AND CRITERION VALUE GO TO 150
  140 IF(JVAR(KVAR).NE.LEVEL(I))GO TO 150
C-----INCREMENT LEVEL COUNTER
      NV2=NV2+1
  150 CONTINUE
C-----IF RECORD DOESN≠T MATCH GO TO 100
      IF(NV1.NE.NV2)GO TO 100
C-----INCREMENT RECORD COUNT
  160 NREC=NREC+1
C-----IF CROSS SORT BETWEEN LEVELS 2 AND 3 GO TO 300
      IF(ICRS.EQ.1)GO TO 300
C-----IF SORT LEVEL <4 WRITE ID SORT INFO. ON SCRATCH OUTPUT LUN
      IF(LSORT.LT.4)WRITE(IOUT)(JVAR(J),J=1,LSORT)
C-----IF TABLES TO BE PRODUCED WRITE FULL RECORD ON ISCR
      IF(MSORT.GT.0)WRITE(ISCR)(JVAR(J),J=1,NV)
C-----IF MEANS AND PERCENTAGE ANALYSIS BUT NO TABLES WRITE FULL RECORD
C     ON LUN ISCR
      IF(IOP4.GT.0.AND.MSORT.LE.0)WRITE(ISCR)(JVAR(J),J=1,NV)
      GO TO 100
C-----READ HEADER ID FROM SCRATCH INPUT LUN
  180 READ(INP)(NO(I),I=1,LS1)
      IF(EOF(INP))GO TO 200
      GO TO 105
C-----IF EOF AND NOT FIRST LEVEL OF CROSS SORT GO TO 205
  200 IF(ICRS.NE.1)GO TO 205
C-----SET EOF FLAG
      EOFM=1.
      GO TO 410
C-----IF NO RECORDS MEET CRITERION RETURN TO MAIN PROGRAM
```

```
OS3 FORTRAN  VERSION 2.1  SORT      02/28/72  1718
  205 IF(NREC.LE.0)RETURN                                               SRT121
C-----WRITE FILE MARK ON TABLE SCRATCH LUN                              SRT122
      ENDFILE ISCR                                                      SRT123
C-----RETURN IS SORT LEVEL >3                                           SRT124
      IF(LSORT.GT.3)RETURN                                              SRT125
C-----WRITE FILE MARK ON HEADER OUTPUT LUN                               SRT126
      ENDFILE IOUT                                                      SRT127
      REWIND INP$REWIND IOUT$REWIND ISCR                                SRT128
C-----SET SKIP FLAG                                                     SRT129
      ISKP=1                                                            SRT130
      IF(LSORT.EQ.3.AND.ICRS.EQ.0)ISKP=2                                SRT131
      IF(LSORT.EQ.3.AND.ICRS.EQ.2)ISKP=2                                SRT132
      RETURN                                                            SRT133
C-----PREPARATION OF SCRATCH LUN DATA AT ICRS=1                          SRT134
C-----IF FIRST PROJECT OR NEW PROJECT NUMBER GO TO 400                  SRT135
  300 IF(IGRP.LT.JVAR(1))GO TO 400                                      SRT136
C-----IF SORT LEVEL 3 GO TO 320                                         SRT137
  305 IF(LSORT.EQ.3)GO TO 320                                           SRT138
C-----FLAG OUTPUTS IN LVAR(SORT LEVEL=2)                                SRT139
      DO 310 I=31,45                                                    SRT140
      IF(JVAR(I).LE.0)GO TO 310                                         SRT141
      JV=JVAR(I)                                                        SRT142
      LVAR(JV)=1                                                        SRT143
  310 CONTINUE                                                          SRT144
C-----WRITE DATA RECORD ON ISCR IF TABLES TO BE MADE                     SRT145
      IF(MSORT.GT.0)WRITE(ISCR)(JVAR(J),J=1,NV)                          SRT146
      GO TO 100                                                         SRT147
C-----FLAG PERSONNEL NUMBERS IN LVAR (SORT LEVEL=3)                     SRT148
  320 DO 330 I=8,11                                                     SRT149
      IF(JVAR(I).LE.0)GO TO 330                                         SRT150
      JV=JVAR(I)                                                        SRT151
      LVAR(JV)=1                                                        SRT152
  330 CONTINUE                                                          SRT153
C-----WRITE DATA RECORD IF TABLES TO BE MADE                            SRT154
      IF(MSORT.GT.0)WRITE(ISCR)(JVAR(J),J=1,NV)                          SRT155
      GO TO 100                                                         SRT156
C-----RESET GROUP(PROJECT NO.)FLAG TO ID NUMBER OF NEXT PROJECT AND WRITE SRT157
C     SCRATCH OUTPUT RECORDS FOR THIS GROUP                             SRT158
C-----IF NOT FIRST RECORD GO TO 410                                     SRT159
  400 IF(IGRP.GT.0)GO TO 410                                            SRT160
C-----SET GROUP FLAG TO FIRST PROJECT NUMBER                            SRT161
      IGRP=JVAR(1)                                                      SRT162
      GO TO 305                                                         SRT163
C-----WRITE OUTPUT SCRATCH RECORDS                                      SRT164
  410 DO 420 I=1,220                                                    SRT165
C-----GO TO 420 IF LVAR <=0                                             SRT166
      IF(LVAR(I).LE.0)GO TO 420                                         SRT167
      WRITE(IOUT)IGRP,I                                                 SRT168
C-----RESET NON ZERO VALUES TO ZERO                                     SRT169
      LVAR(I)=0                                                         SRT170
  420 CONTINUE                                                          SRT171
C-----IF EOF FLAG >0 GO TO 205                                          SRT172
      IF(EOFM.GT.0)GO TO 205                                            SRT173
C-----RESET GROUP FLAG TO NEXT PROJECT NUMBER                           SRT174
      IGRP=JVAR(1)                                                      SRT175
      GO TO 305                                                         SRT176
      END                                                               SRT177

NO ERRORS FOR SORT
```

Appendix 7

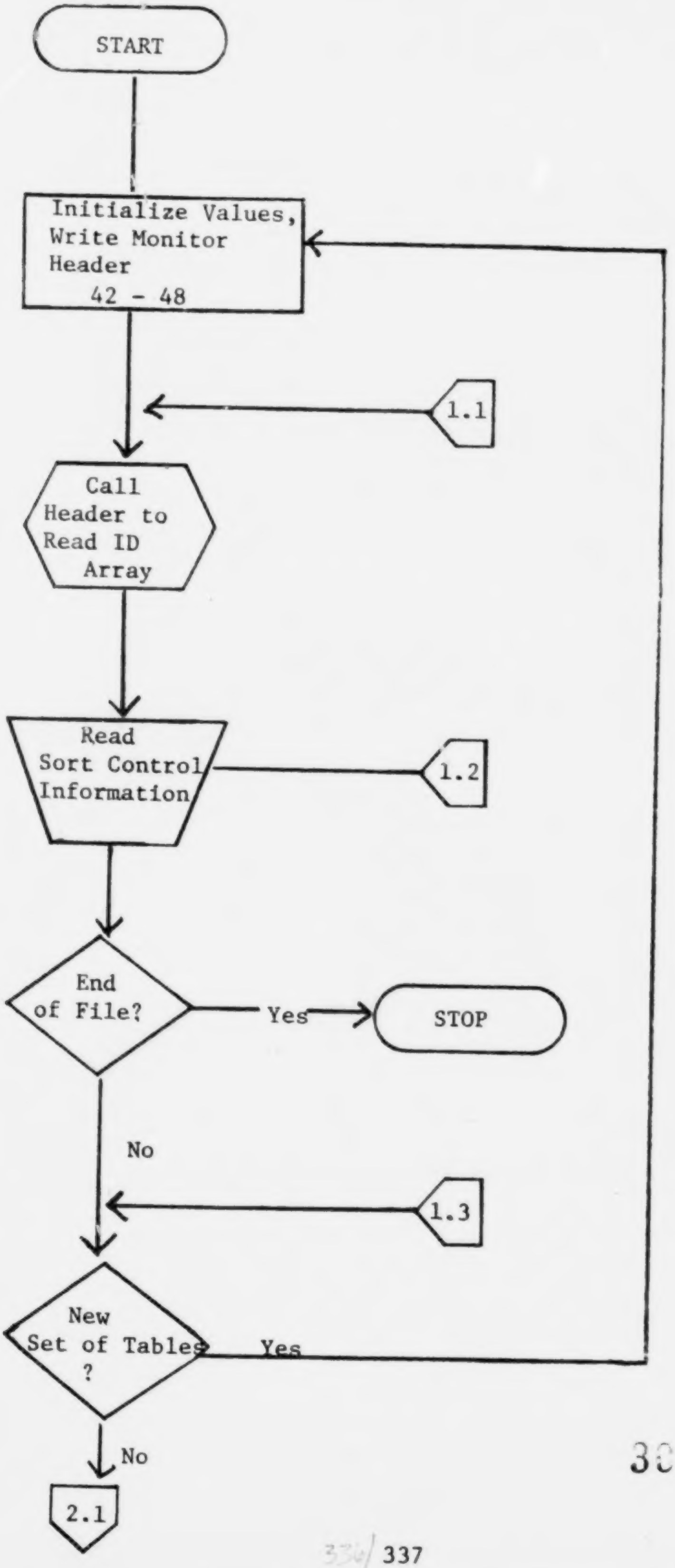
Computer Program Flow Charts

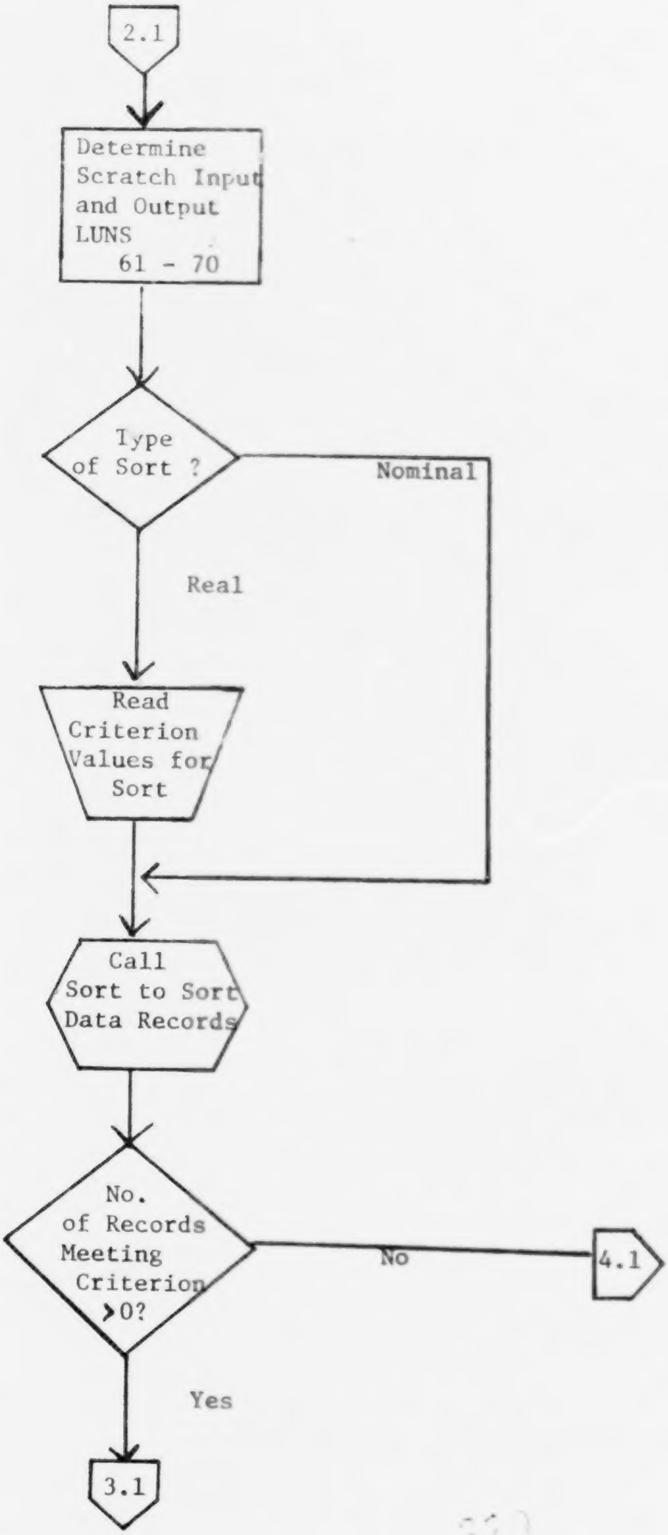
RDDE7
ISO
LIMIT
HEADER
MEAN4
PRECON
TABLEF
SORT

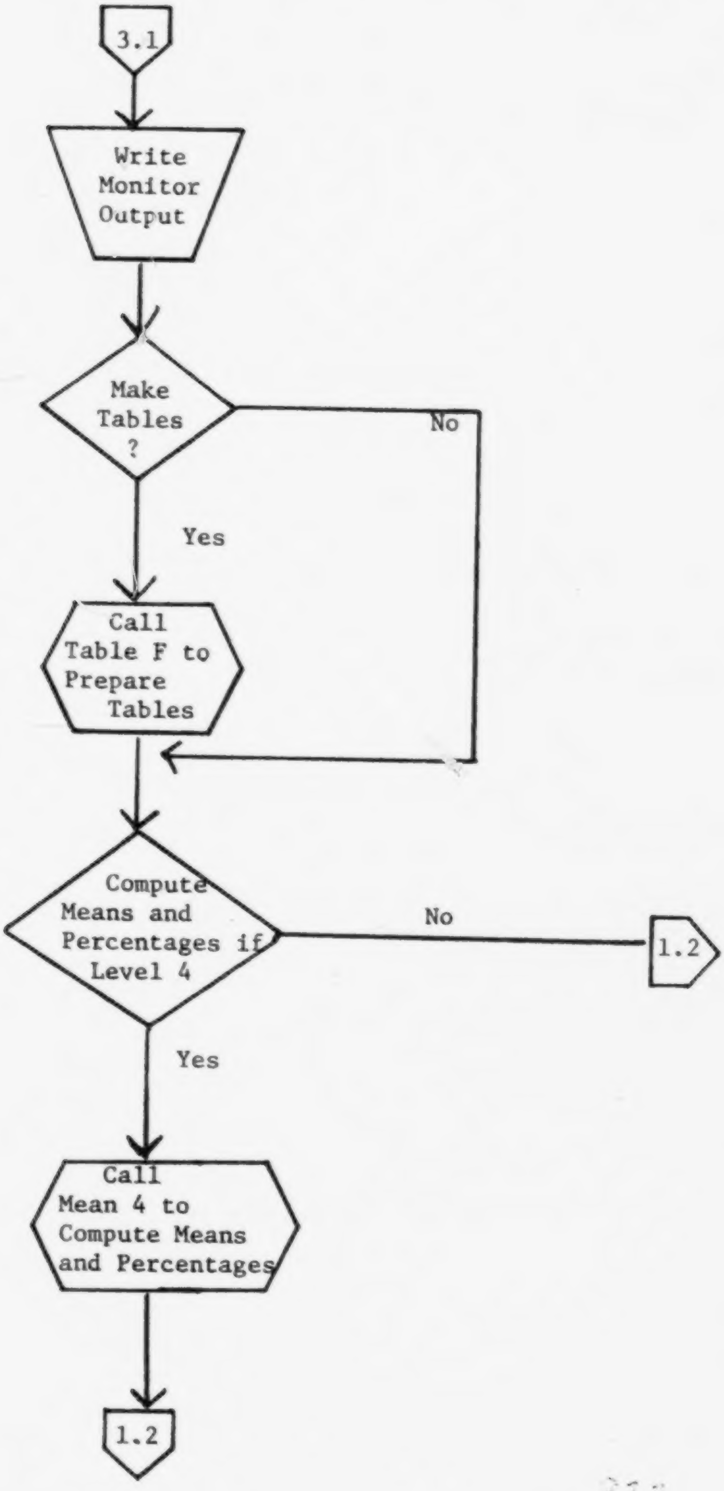
APPENDIX 7

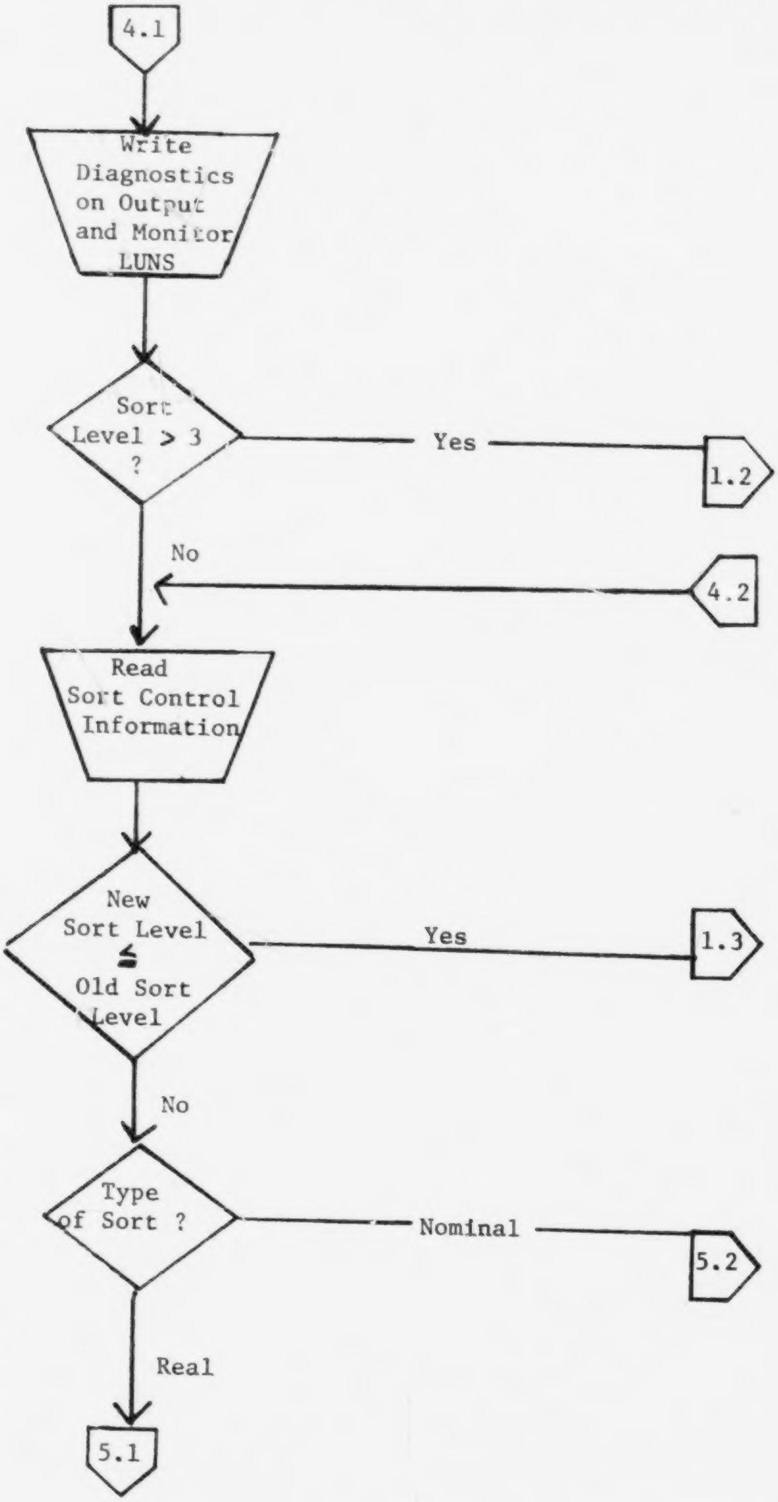
Computer Program Flow Charts

PROGRAM RDDE7

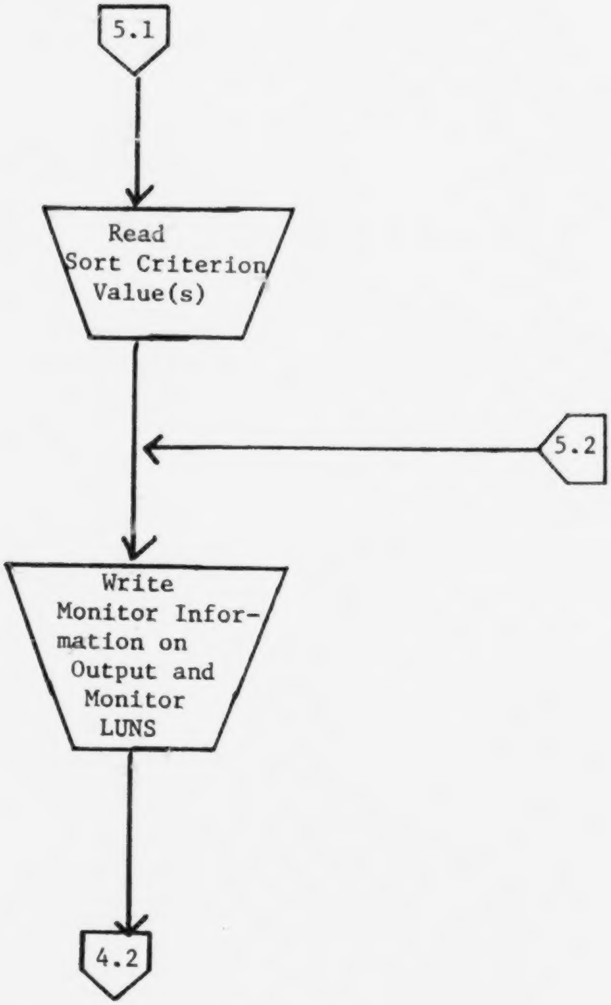

START
Initialize Values, Write Monitor Header 42 - 48
1.1
Call Header to Read ID Array
Read Sort Control Information
1.2
End of File?
Yes
STOP
No
1.3
New Set of Tables ?
Yes
No
2.1


2.1
Determine Scratch Input and Output LUNS 61 - 70
Type of Sort ?
Nominal
Real
Read Criterion Values for Sort
Call Sort to Sort Data Records
No. of Records Meeting Criterion >0?
No
4.1
Yes
3.1

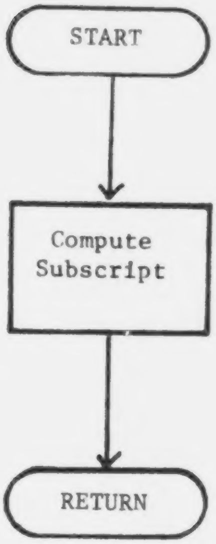

3.1
Write Monitor Output
Make Tables ?
No
Yes
Call Table F to Prepare Tables
Compute Means and Percentages if Level 4
No
1.2
Yes
Call Mean 4 to Compute Means and Percentages
1.2


4.1
Write Diagnostics on Output and Monitor LUNS
Sort Level > 3 ?
Yes
1.2
No
4.2
Read Sort Control Information
New Sort Level ≤ Old Sort Level
Yes
1.3
No
Type of Sort ?
Nominal
5.2
Real
5.1

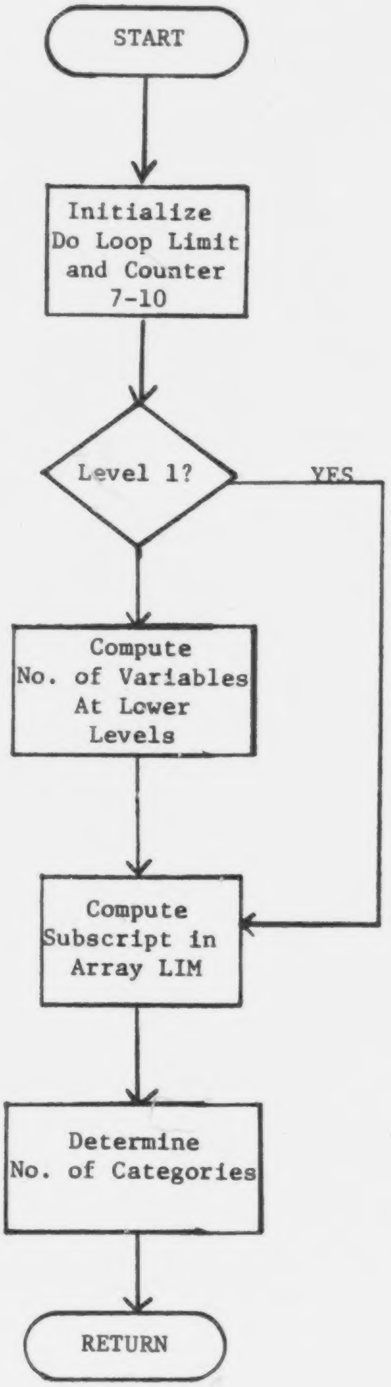
RDDE7-5


5.1
Read Sort Criterion Value(s)
5.2
Write Monitor Information on Output and Monitor LUNS
4.2

FUNCTION ISO

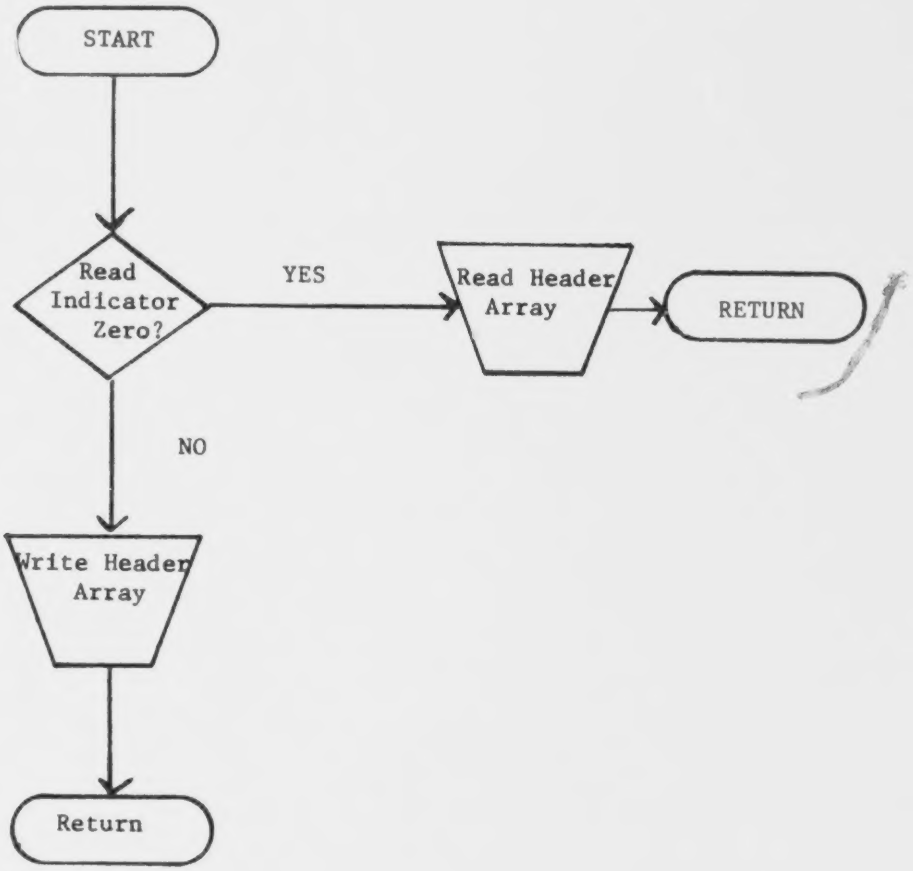

START
Compute Subscript
RETURN

FUNCTION LIMIT

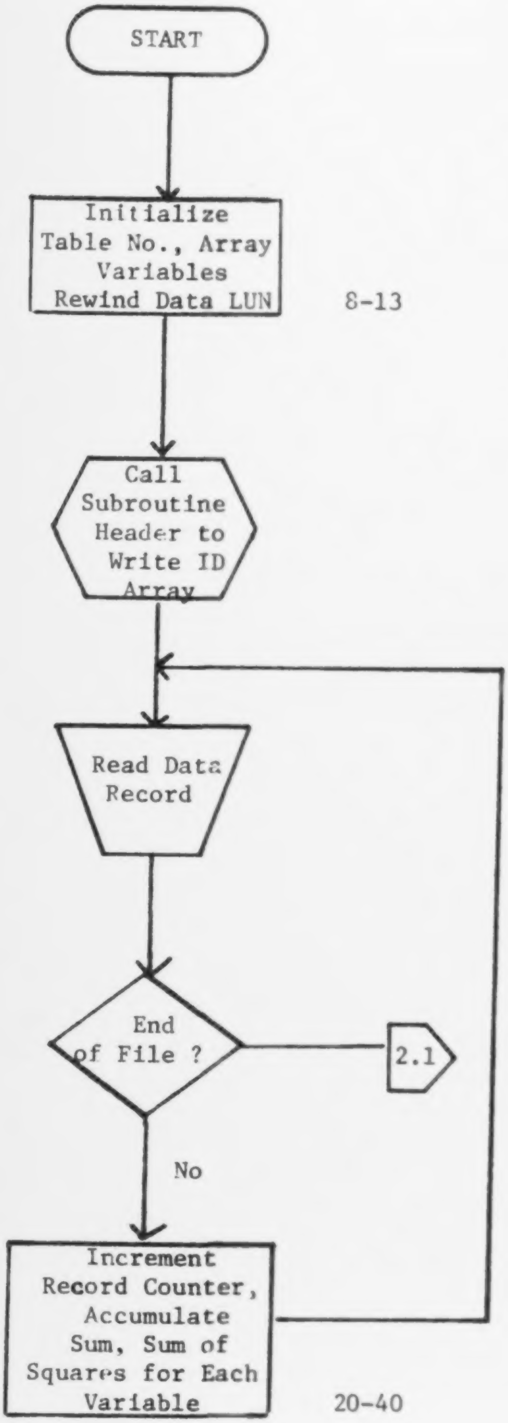

START
Initialize Do Loop Limit and Counter 7-10
Level 1?
YES
Compute No. of Variables At Lower Levels
Compute Subscript in Array LIM
Determine No. of Categories
RETURN

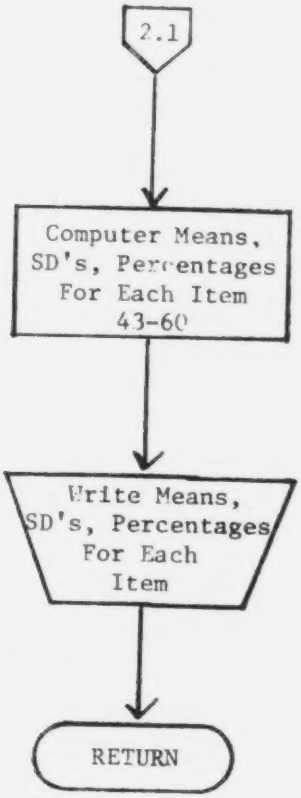
APPENDIX 7 (cont'd.)

SUBROUTINE HEADER


START
Read Indicator Zero?
YES
Read Header Array
RETURN
NO
Write Header Array
Return

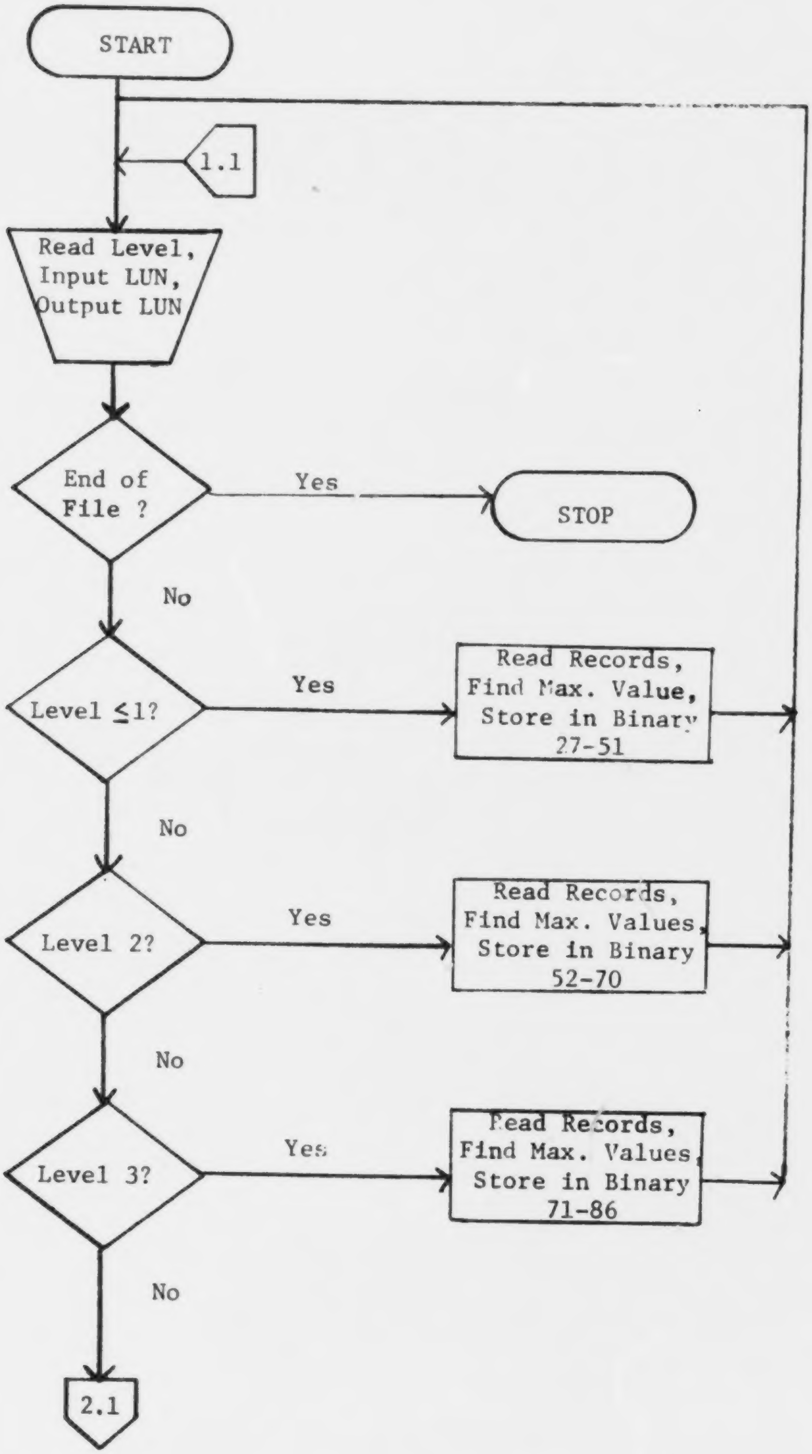
SUBROUTINE MEAN4

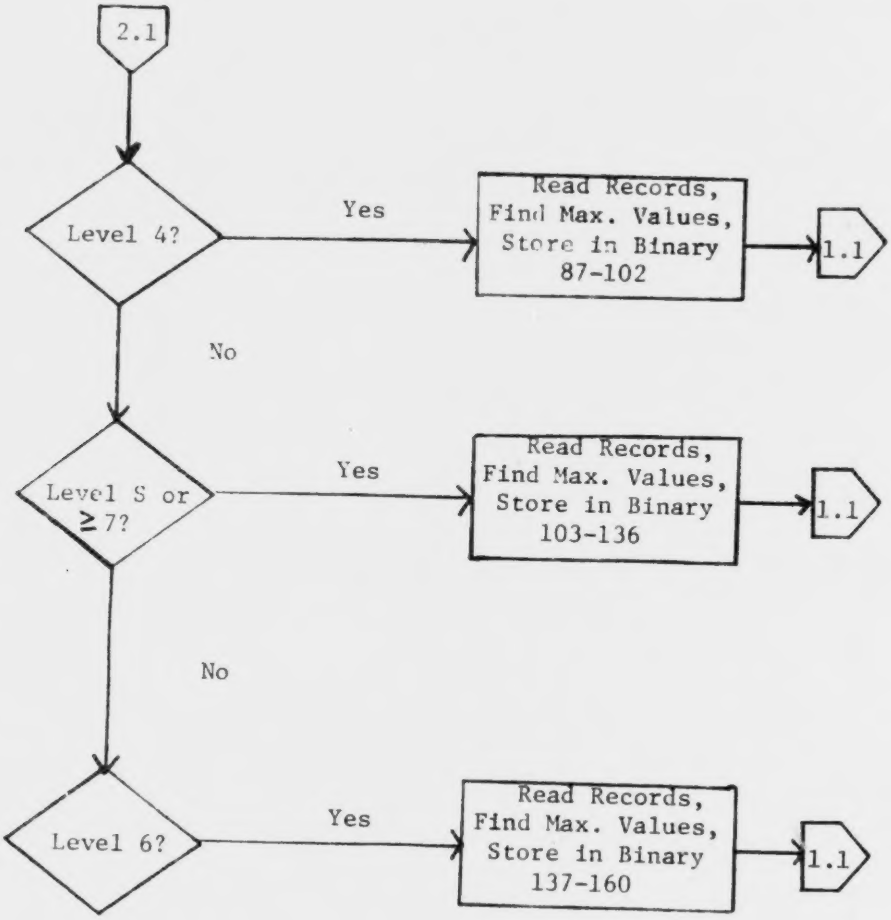

START
Initialize Table No., Array Variables Rewind Data LUN
8-13
Call Subroutine Header to Write ID Array
Read Data Record
End of File ?
2.1
No
Increment Record Counter, Accumulate Sum, Sum of Squares for Each Variable
20-40


2.1
Computer Means, SD's, Percentages For Each Item 43-60
Write Means, SD's, Percentages For Each Item
RETURN

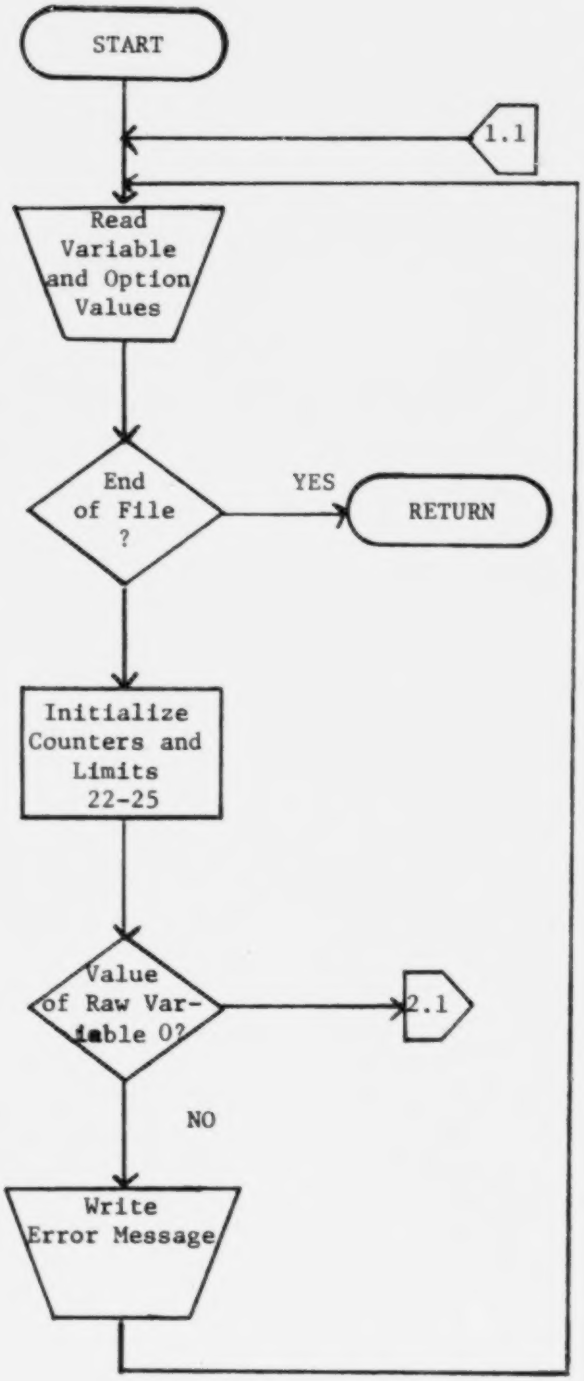
APPENDIX 7 (cont'd.)

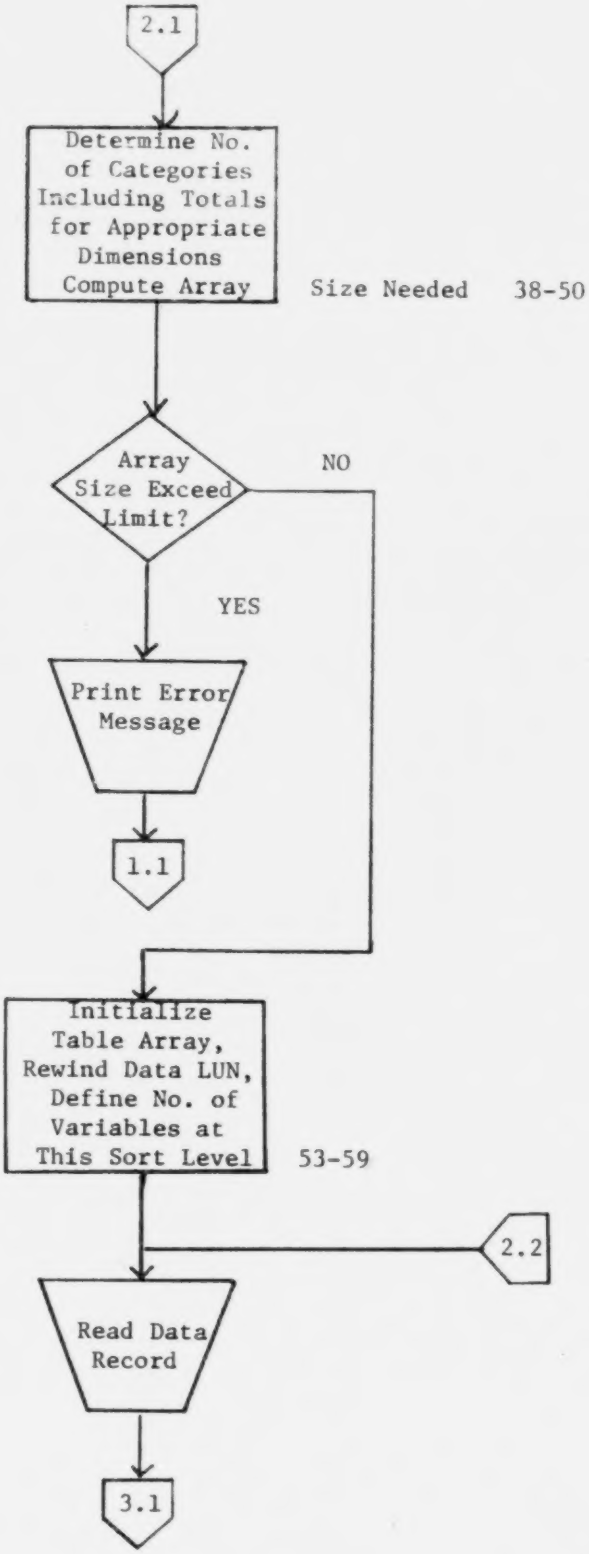
PROGRAM PRECON

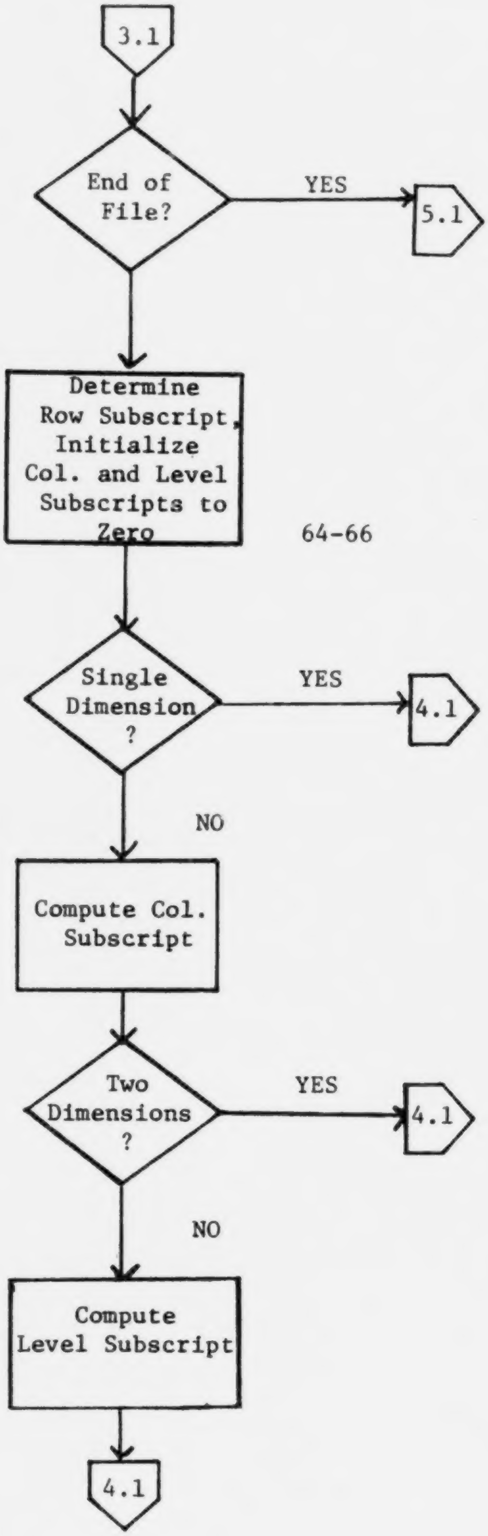

START
1.1
Read Level,
Input LUN,
Output LUN
End of File ?
Yes
STOP
No
Level ≤1?
Yes
Read Records,
Find Max. Value,
Store in Binary
27-51
No
Level 2?
Yes
Read Records,
Find Max. Values,
Store in Binary
52-70
No
Level 3?
Yes
Read Records,
Find Max. Values,
Store in Binary
71-86
No
2.1

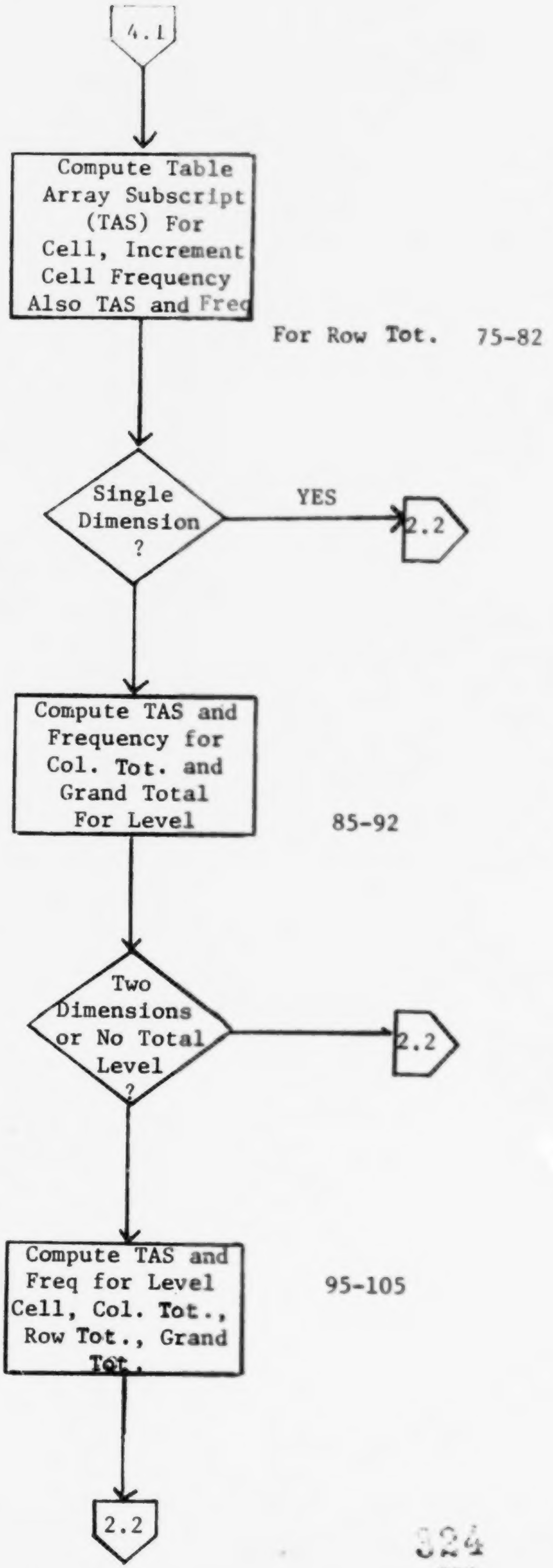

2.1
Level 4?
Yes
Read Records, Find Max. Values, Store in Binary 87-102
1.1
No
Level S or ≥ 7?
Yes
Read Records, Find Max. Values, Store in Binary 103-136
1.1
No
Level 6?
Yes
Read Records, Find Max. Values, Store in Binary 137-160
1.1

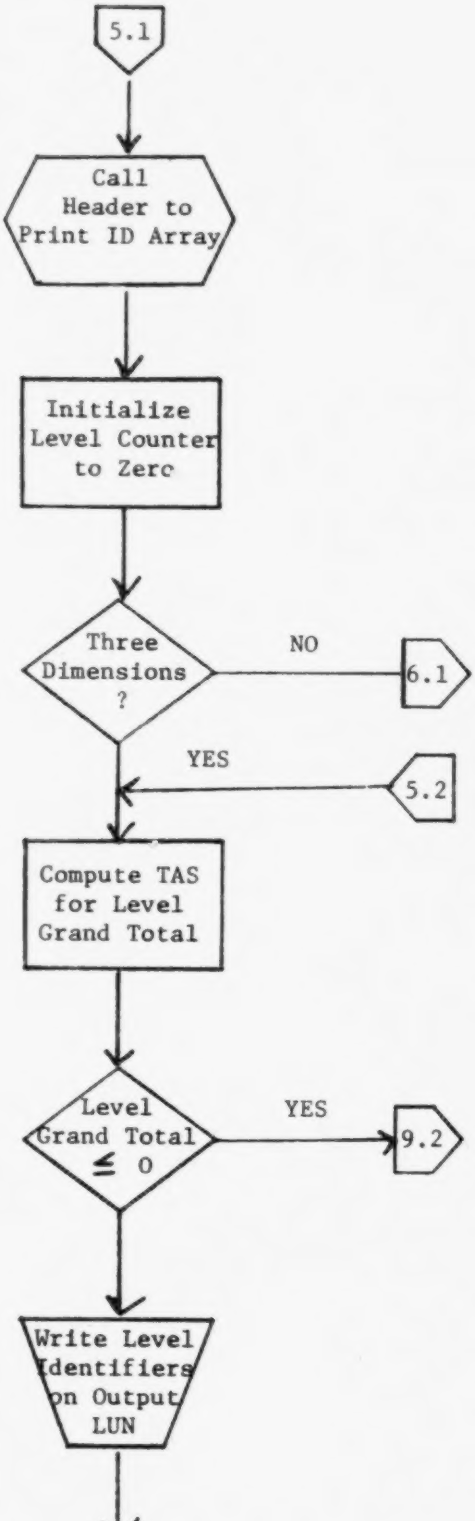
SUBROUTINE TABLEF

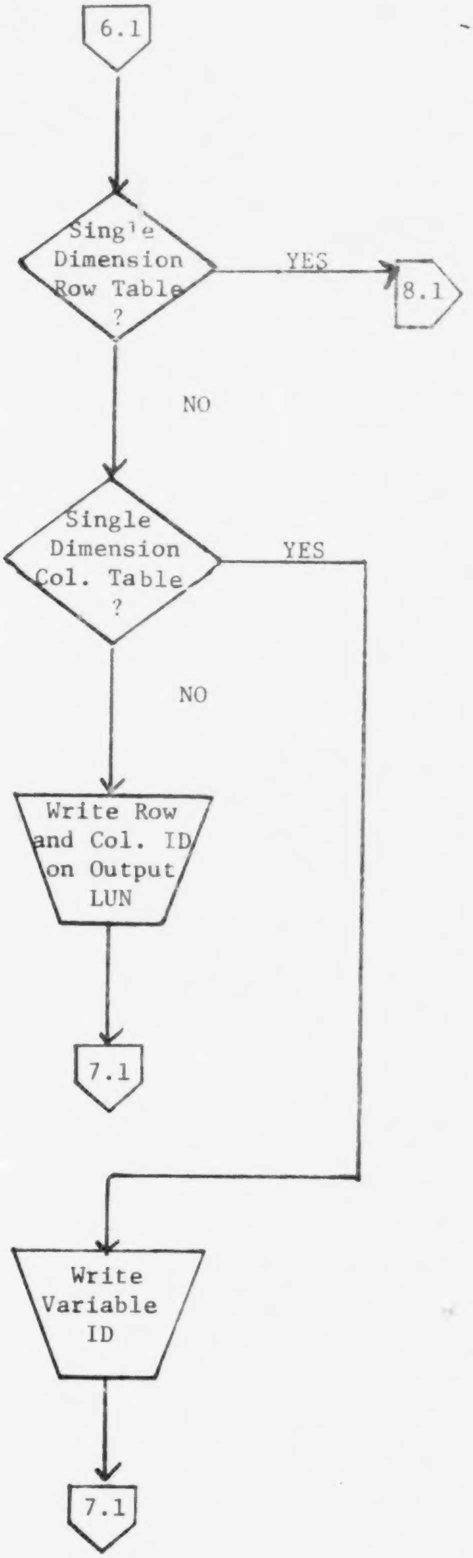

START
1.1
Read Variable and Option Values
End of File ?
YES
RETURN
Initialize Counters and Limits 22-25
Value of Raw Variable 0?
2.1
NO
Write Error Message

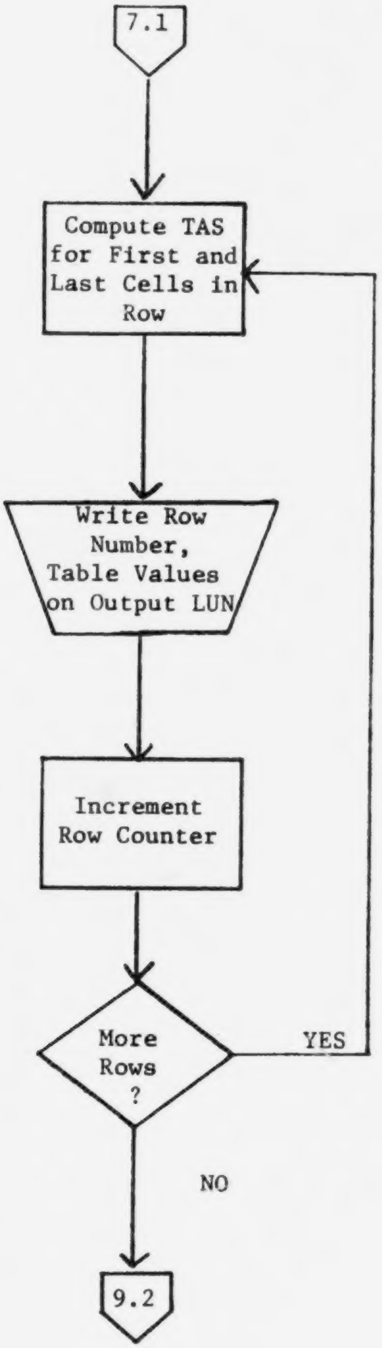

2.1
Determine No. of Categories Including Totals for Appropriate Dimensions Compute Array Size Needed
38-50
Array Size Exceed Limit?
NO
YES
Print Error Message
1.1
Initialize Table Array, Rewind Data LUN, Define No. of Variables at This Sort Level
53-59
2.2
Read Data Record
3.1

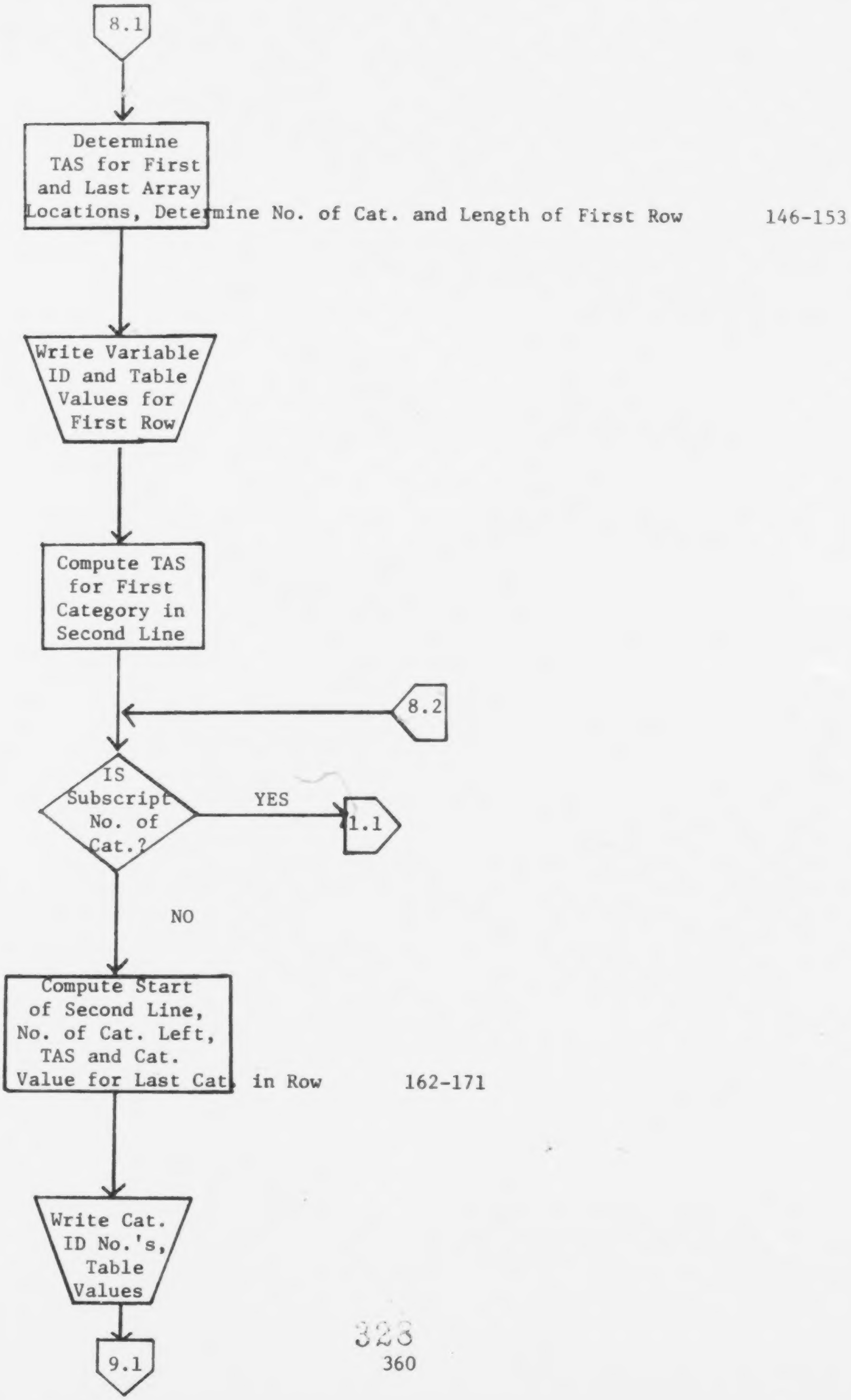

3.1
End of File?
YES
5.1
Determine Row Subscript, Initialize Col. and Level Subscripts to Zero
64-66
Single Dimension ?
YES
4.1
NO
Compute Col. Subscript
Two Dimensions ?
YES
4.1
NO
Compute Level Subscript
4.1

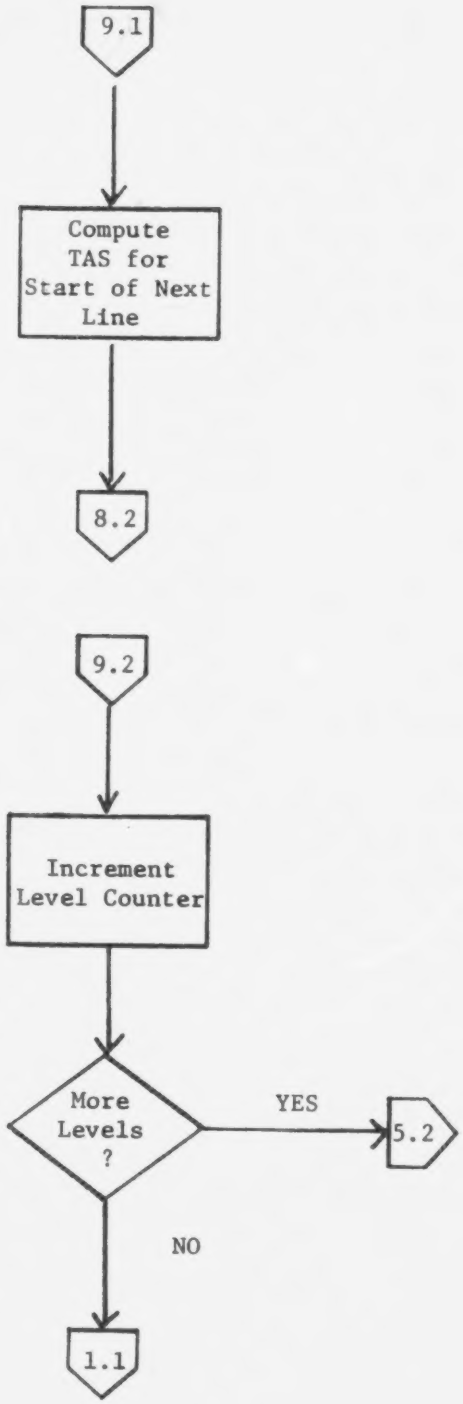

4.1
Compute Table Array Subscript (TAS) For Cell, Increment Cell Frequency Also TAS and Freq For Row Tot.
75-82
Single Dimension ?
YES
2.2
Compute TAS and Frequency for Col. Tot. and Grand Total For Level
85-92
Two Dimensions or No Total Level ?
2.2
Compute TAS and Freq for Level Cell, Col. Tot., Row Tot., Grand Tot.
95-105
2.2


5.1
Call Header to Print ID Array
Initialize Level Counter to Zero
Three Dimensions ?
NO
6.1
YES
5.2
Compute TAS for Level Grand Total
Level Grand Total ≤ 0
YES
9.2
Write Level Identifiers on Output LUN
6.1

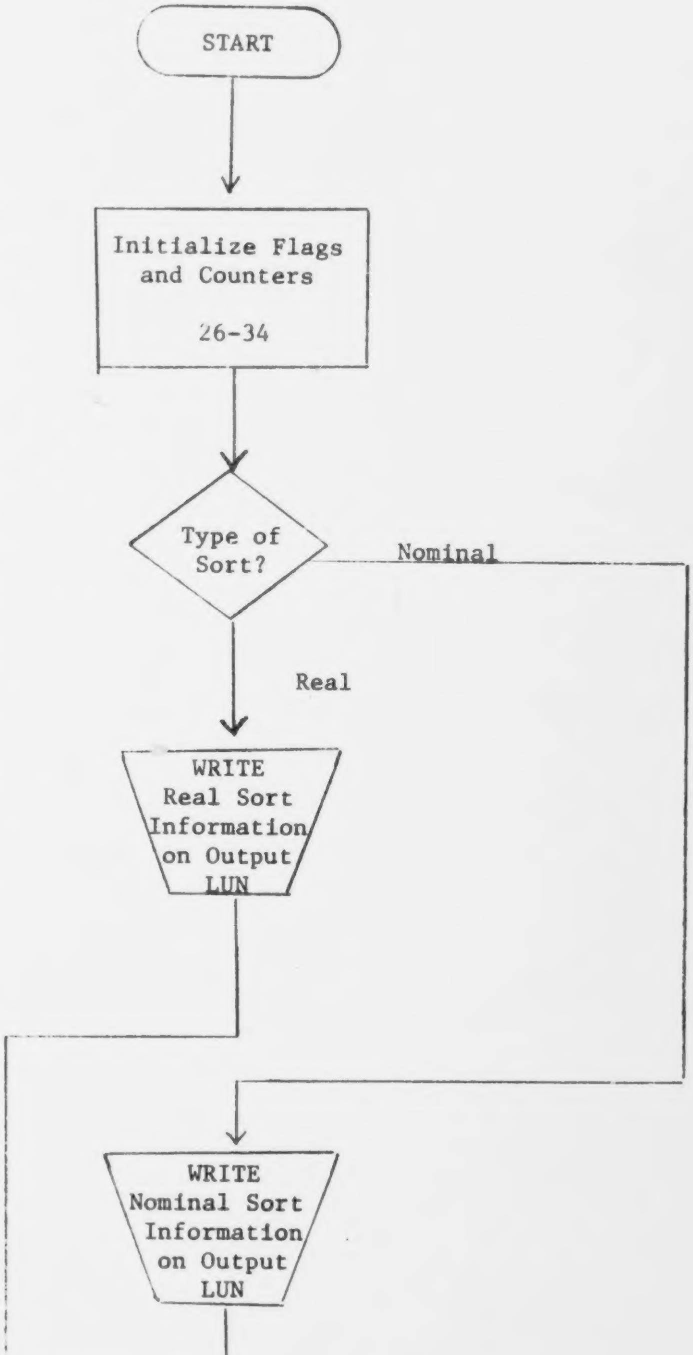

6.1
Single Dimension Row Table ?
YES
8.1
NO
Single Dimension Col. Table ?
YES
NO
Write Row and Col. ID on Output LUN
7.1
Write Variable ID
7.1

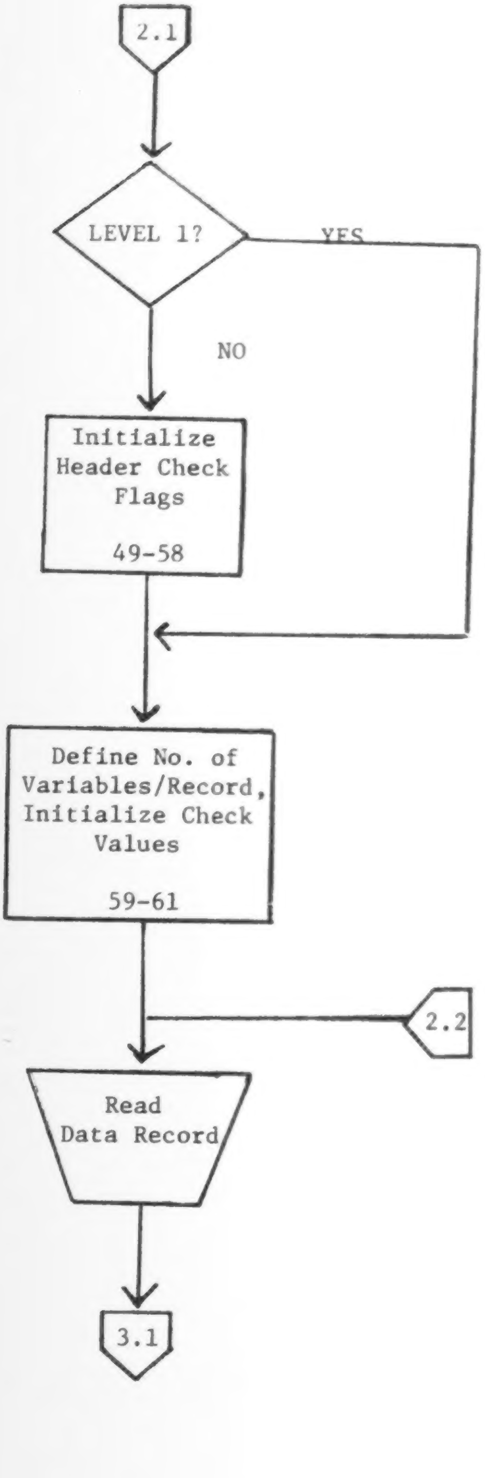

7.1
Compute TAS for First and Last Cells in Row
Write Row Number, Table Values on Output LUN
Increment Row Counter
More Rows ?
YES
NO
9.2

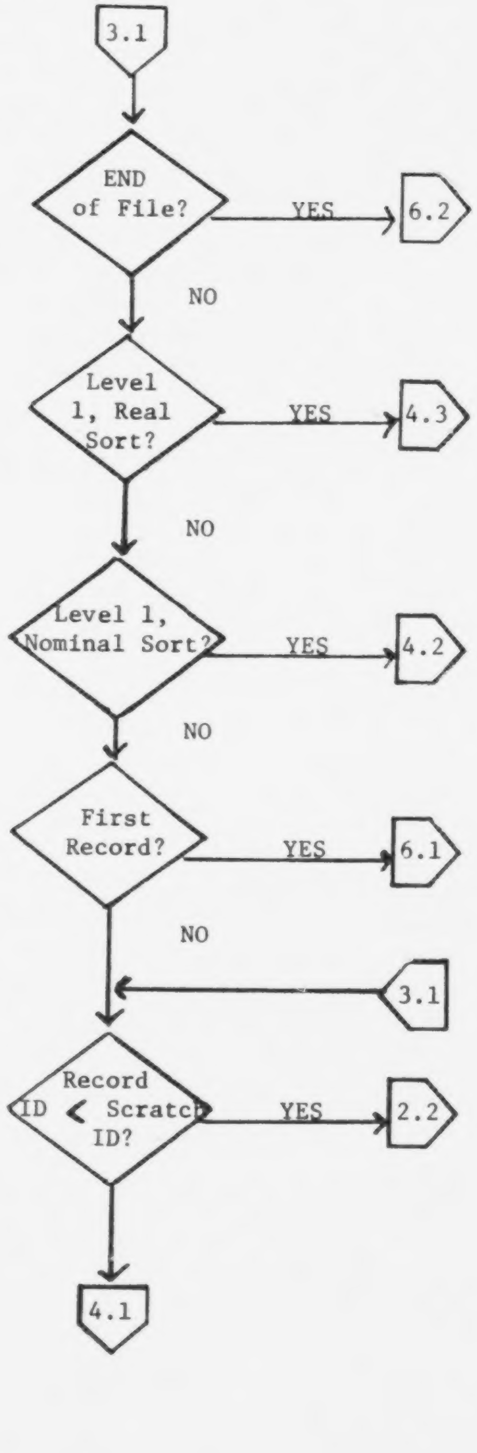

8.1
Determine TAS for First and Last Array Locations, Determine No. of Cat. and Length of First Row
146-153
Write Variable ID and Table Values for First Row
Compute TAS for First Category in Second Line
8.2
IS Subscript No. of Cat.?
YES
1.1
NO
Compute Start of Second Line, No. of Cat. Left, TAS and Cat. Value for Last Cat. in Row
162-171
Write Cat. ID No.'s, Table Values
9.1

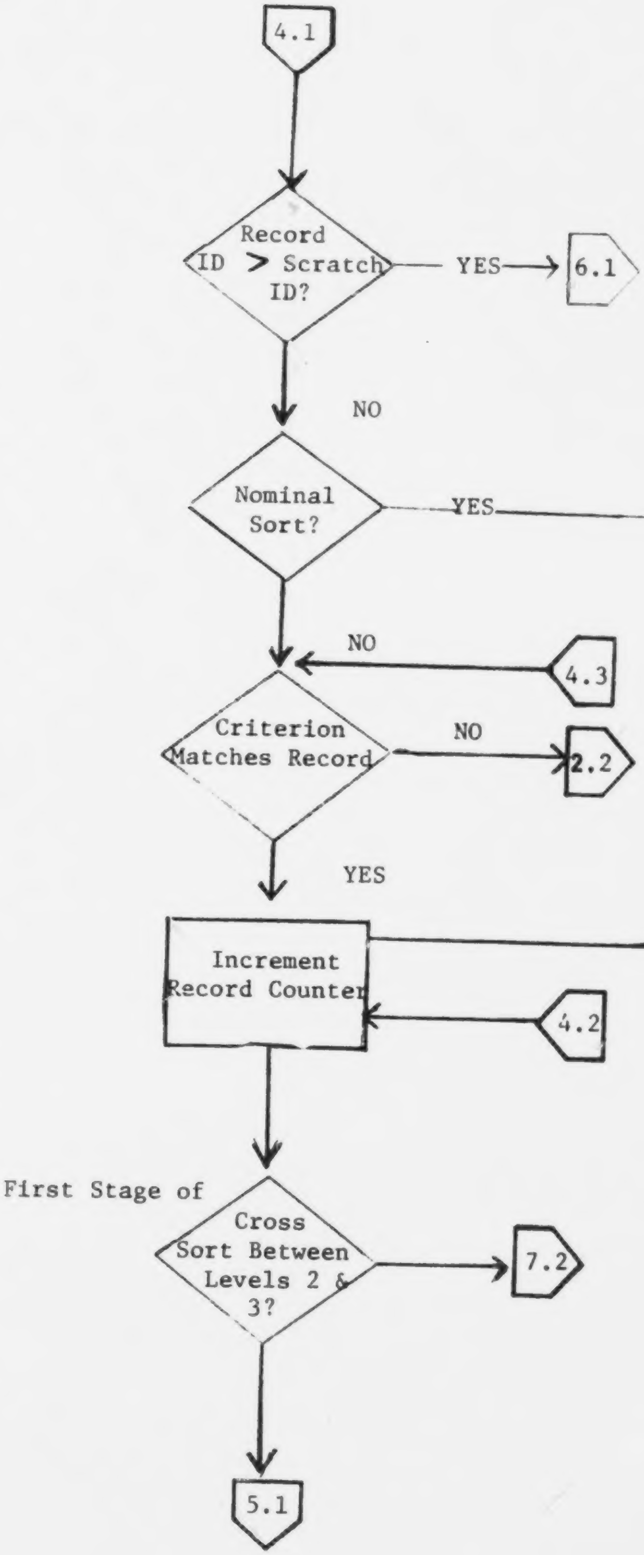

9.1
Compute TAS for Start of Next Line
8.2
9.2
Increment Level Counter
More Levels ?
YES
5.2
NO
1.1

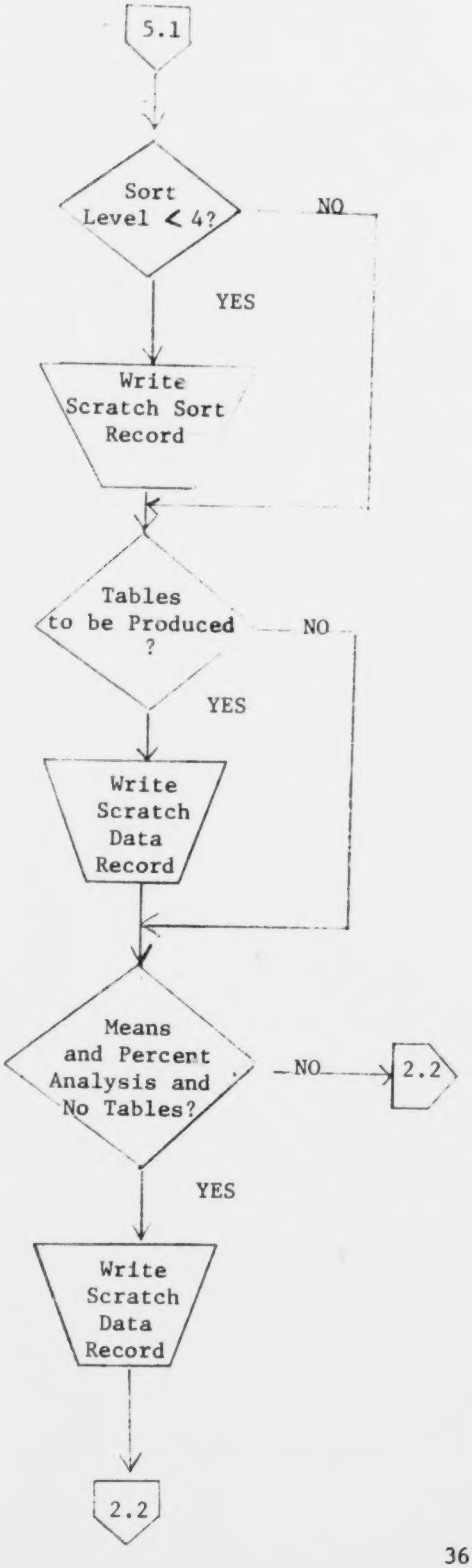
SUBROUTINE SORT

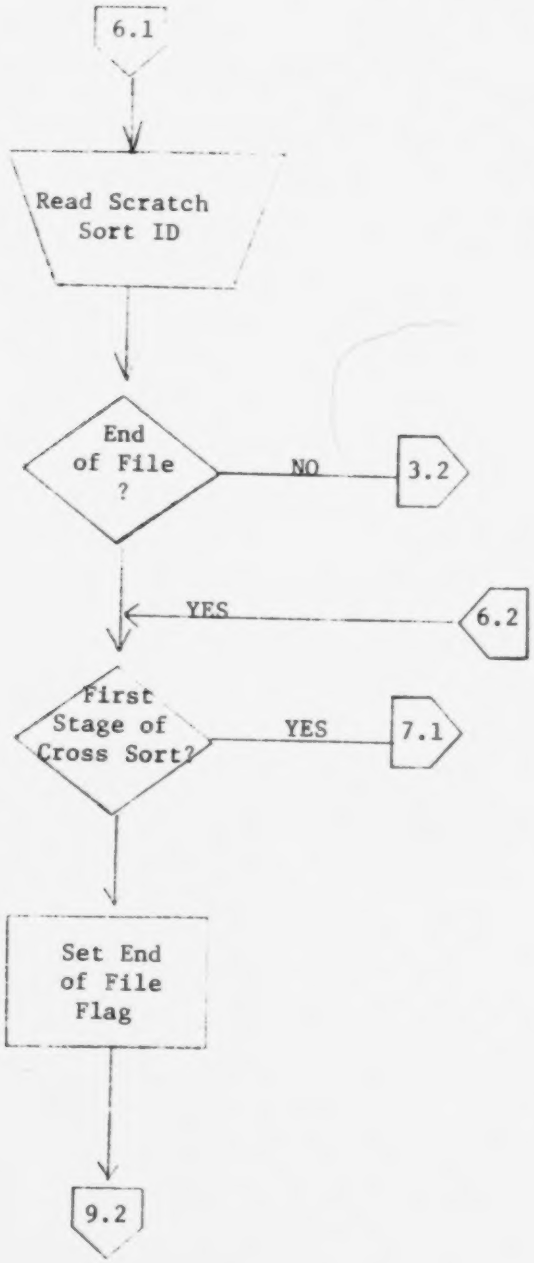

START
Initialize Flags and Counters
26-34
Type of Sort?
Nominal
Real
WRITE Real Sort Information on Output LUN
WRITE Nominal Sort Information on Output LUN
2.1

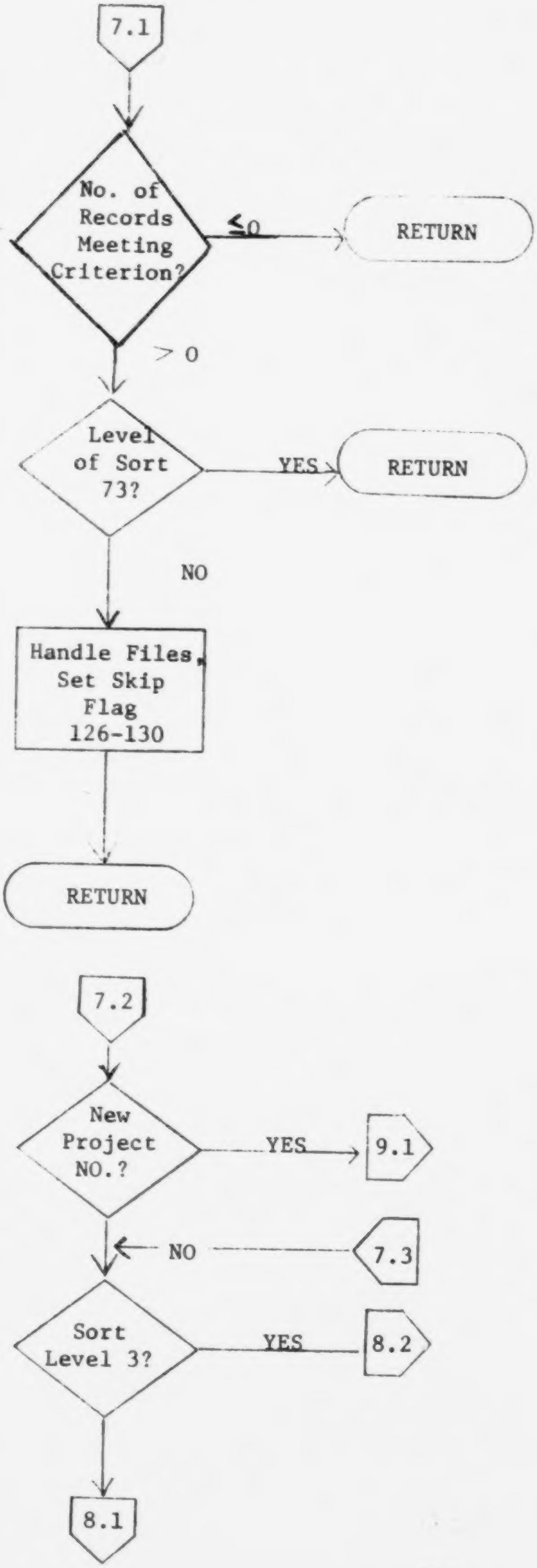

2.1
LEVEL 1?
YES
NO
Initialize Header Check Flags
49-58
Define No. of Variables/Record, Initialize Check Values
59-61
2.2
Read Data Record
3.1

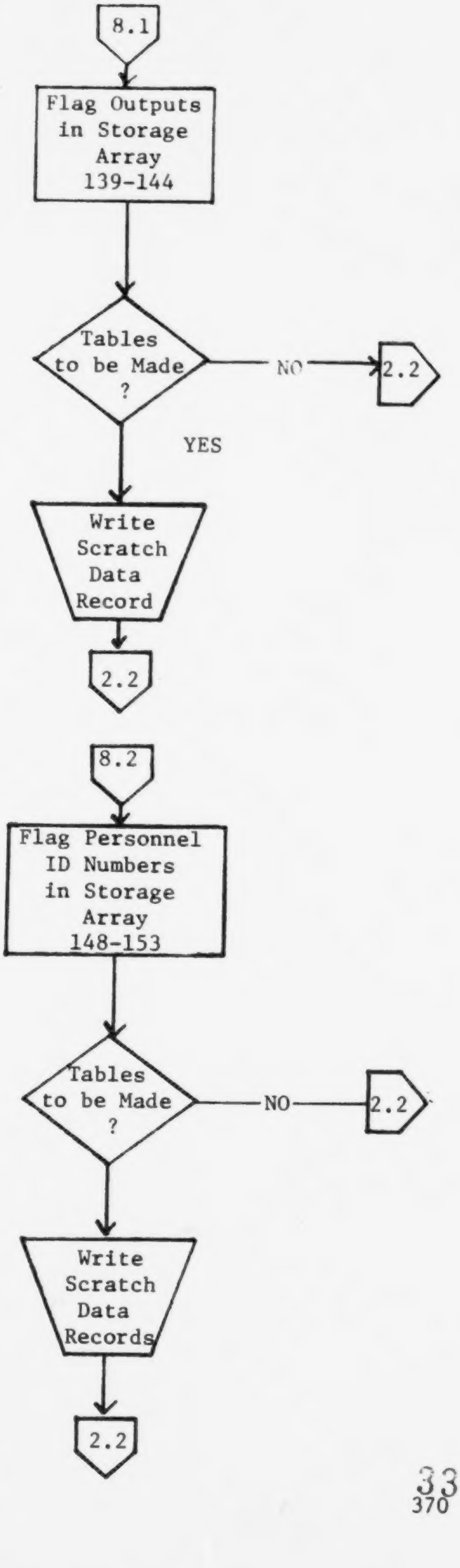

3.1
END of File?
YES
6.2
NO
Level 1, Real Sort?
YES
4.3
NO
Level 1, Nominal Sort?
YES
4.2
NO
First Record?
YES
6.1
NO
3.1
Record ID < Scratch ID?
YES
2.2
4.1

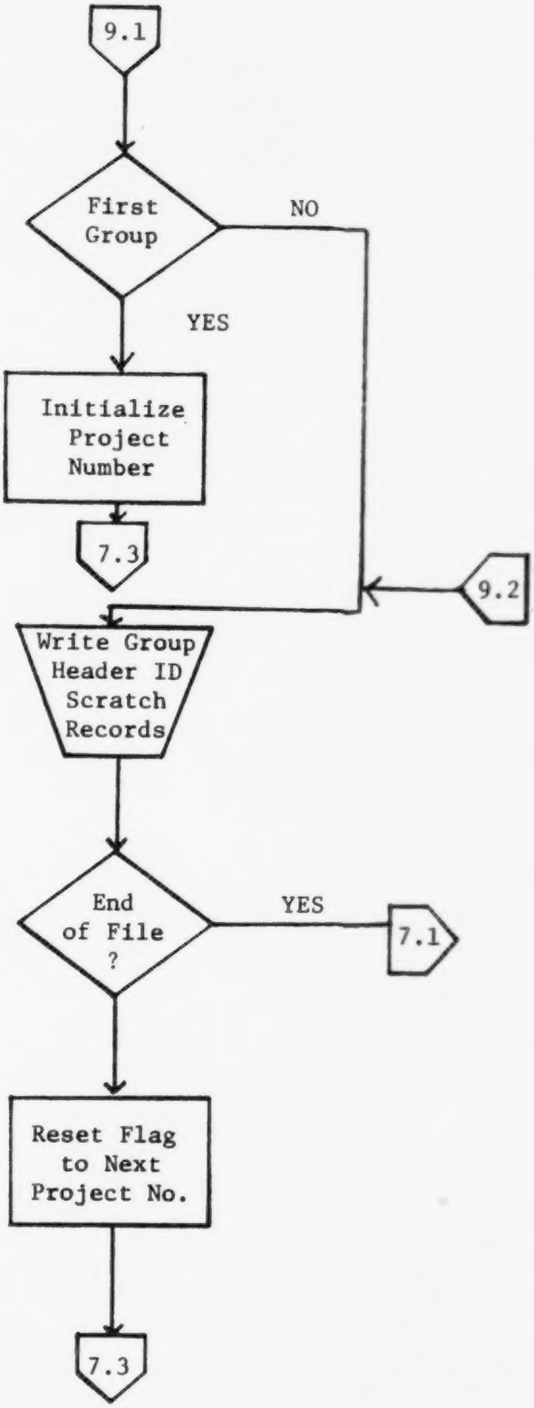

4.1
Record ID > Scratch ID?
YES
6.1
NO
Nominal Sort?
YES
NO
4.3
Criterion Matches Record
NO
2.2
YES
Increment Record Counter
4.2
First Stage of
Cross Sort Between Levels 2 & 3?
7.2
5.1


5.1
Sort Level < 4?
NO
YES
Write Scratch Sort Record
Tables to be Produced ?
NO
YES
Write Scratch Data Record
Means and Percent Analysis and No Tables?
NO
2.2
YES
Write Scratch Data Record
2.2


6.1
Read Scratch Sort ID
End of File ?
NO
3.2
YES
6.2
First Stage of Cross Sort?
YES
7.1
Set End of File Flag
9.2


7.1
No. of Records Meeting Criterion?
≤0
RETURN
> 0
Level of Sort 73?
YES
RETURN
NO
Handle Files, Set Skip Flag 126-130
RETURN
7.2
New Project NO.?
YES
9.1
NO
7.3
Sort Level 3?
YES
8.2
8.1


8.1
Flag Outputs in Storage Array 139-144
Tables to be Made ?
NO
2.2
YES
Write Scratch Data Record
2.2
8.2
Flag Personnel ID Numbers in Storage Array 148-153
Tables to be Made ?
NO
2.2
Write Scratch Data Records
2.2


9.1
First Group
NO
YES
Initialize Project Number
7.3
9.2
Write Group Header ID Scratch Records
End of File ?
YES
7.1
Reset Flag to Next Project No.
7.3

APPENDIX 8

File Documentation

APPENDIX 8

File Documentation

DATA FILES

(for use with all computer-stored data)

SECTION	LEVEL	
1	1 - A	Project Descriptors - Complete Set
2	1 - B	Project Descriptors - Sort Set
3	2 - A	Personnel Descriptors - Complete Set
4	2 - B	Personnel Descriptors - Sort Set
5	3	Output Descriptors
6	4	Scaled Data
7	5	Standards Data
8	6	Task Data
9	7	Enabler (KSS) Data

APPENDIX 8 (cont'd)
Section 1

LEVEL 1-A: PROJECT DESCRIPTORS
(complete set of variables)

Variable		Digits	Form 02 Source	Data Type
1.	* Project Number	3	Front Page	C
2.	* Project Focus (Set Y)	1	F.P.-A	C
3.	* Project Complexity	1	F.P.-B	C
4.	* Project Stage	1	F.P.-C	C
5.	O.E. Region	2	F.P.-D	C
6,7, 8.	* Secondary Foci	1 each	F.P.-E,F,G	C
9.	* Date of Data Collection	2	4	Mo.
10.	* Date of Data Collection	2	4	Yr.
11.	* Project Duration	2	7	Mos.
12.	* Agency Type	2	8	C
13.	* Total Project Funding	1	9a	C
14.	* Current Fiscal Year Funding	1	9b	C
15.	Last Fiscal Year Funding	1	9c	C
Funding Source (12-19):				
16.	U.S.O.E.	3	10a-i	%
17.	Federal other than OE	3	10b-j	%
18.	State	3	10c-h	%
19.	Private Foundation	3	10d-1	%
20.	Local School District	3	101-m	%
21.	College or University	3	10f-m	%
22.	Industry	3	10g-o	%
23.	Other	3	10h-p	%

APPENDIX 8 (cont'd)

Variable	Digits	Form 02 Source	Data Type
24. * Primary Source of Funds	1	11	C
25. * Number of Funding Sources	1	12	N
26. Percent of Total Project Funding: Current Year	3	13a	%
27. Percent of Total Project Funding: Last Year	3	13b	%
28. Percent of Total Project Funding: Next Year	3	13c	%
Staff Size (25-44):			
29. * Professional Staff: Currently	2	14a	N
30. * Professional Staff: Current FY	2	14f	N
31. Professional Staff: Last FY	2	14k	N
32. Professional Staff: Next FY	2	14p	N
33. * Clerical Support: Currently	2	14b	N
34. * Clerical Support: Current FY	2	14g	N
35. Clerical Support: Last FY	2	14l	N
36. Clerical Support: Next FY	2	14q	N
37. * Technical Support: Currently	2	14c	N
38. * Technical Support: Current FY	2	14h	N
39. Technical Support: Last FY	2	14m	N
40. Technical Support: Next FY	2	14r	N
41. * Subcontract Professionals: Current	2	14d	N
42. * Subcontract Professionals: Current FY	2	14i	N
43. Subcontract Professionals: Last FY	2	14n	N
44. Subcontract Professionals: Next FY	2	14s	N

APPENDIX 8 (cont'd)

Variable	Digits	Form 02 Source	Data Type
45. * Other Personnel: Currently	2	14e	N
46. * Other Personnel: Current FY	2	14j	N
47. Other Personnel: Last FY	2	14o	N
48. Other Personnel: Next FY	2	14t	N
Degree Levels of Staff (45-58):			
49. * Doctorate: Professional Staff	2	15a	N
50. Doctorate: Support Staff	2	15h	N
51. * Specialist/Professional: Professional Staff	2	15b	N
52. Specialist/Professional: Support Staff	2	15i	N
53. * Masters: Professional Staff	2	15c	N
54. Masters: Support Staff	2	15j	N
55. * Bachelors: Professional Staff	2	15d	N
56. Bachelors: Support Staff	2	15k	N
57. * Associate: Professional Staff	2	15e	N
58. Associate: Support Staff	2	15l	N
59. * Technical License: Professional Staff	2	15f	N
60. Technical License: Support Staff	2	15m	N
61. * Other Degree Level: Professional Staff	2	15g	N
62. Other Degree Level: Support Staff	2	15n	N
63. * Number of Reports and Documents Finished	2	16	N
64. * Inter-Institutional Alignments	1	17	C
65 * Output Commitments	1	18	C

KEY TO DATA TYPES:

C = coded
O = occurrence of them
N = number count

---

* Variable included in Level 1-B, for sorting of Data in Levels 3, 4, 5, 6.

APPENDIX 8 (cont'd)
Section 2

LEVEL 1-B: PROJECT DESCRIPTORS FOR SORTING
(for sorting Levels 2, 3, 4, 5, 6, or 7)

Variable	Digits	Form 02 Source	Data Type
1. Project Number	3	Front Page	C
2. Project Focus (Set Y)	1	F.P.-A	C
3. Project Complexity	1	F.P.-B	
4. Project Stage	1	F.P.-C	C
5, 6, 7. Secondary Foci	1each	F.P.E,F,G,	C
8. Date of Data Collection	2	4	Mo.
9. Date of Data Collection	2	4	Yr.
10. Project Duration	2	7	Mos.
11. Agency Type	2	8	C
12. Total Project Funding	1	9a	C
13. Current Fiscal Year Funding	1	9b	C
14. Primary Source of Funds	1	11	C
15. Number of Funding Sources	1	12	N
16. Professional Staff: Currently	2	14a	N
17. Professional Staff: Current FY	2	14f	N
18. Clerical Support: Currently	2	14b	N
19. Clerical Support: Current FY	2	14g	N
20. Technical Support: Currently	2	14c	N
21. Technical Support: Current FY	2	14h	N
22. Subcontract Professionals: Currently	2	14d	N
23. Subcontract Professionals: Current FY	2	14i	N
24. Other Personnel: Currently	2	14e	N
25. Other Personnel: Current FY	2	14j	N

APPENDIX B (cont'd)

Variable		Digits	Form 02 Source	Data Type
26.	Doctorate: Professional Staff	2	15a	N
27.	Specialist/Professional: Professional Staff	2	15b	N
28.	Masters: Professional Staff	2	15c	N
29.	Bachelors: Professional Staff	2	15d	N
30.	Associate: Professional Staff	2	15e	N
31.	Technical License: Professional Staff	2	15f	N
32.	Other Degree Level: Professional Staff	2	15g	N
33.	Number of Reports and Documents Finished	2	16	N
34.	Inter-Institutional Alignments	1	17	C
35.	Output Commitments	1	18	C

KEY TO DATA TYPES:
C = coded
O = occurrence
N = number count

APPENDIX 8 (cont'd)

Section 3

LEVEL 2-A: PERSONNEL DESCRIPTORS
(complete set of personnel variables)

Variable		Digits	Form 03 Source	Data Type
1.	* Project Number	3	top	C
2.	* Interviewee Number	2	top	C
3.	* FTE of Interviewee on Project	3	top	N
4.	* Manager vs Staff/Line (and level)	1	3,4	C
5.	* Sex	1	5.	C
6.	* Age	1	6.	C
7.	* Highest Degree Held	1	7.	C
8.	* Number of Professional Pubs	1	9.	C
9.	* Major For Highest Degree (1)	2	10.	C
10.	* Major For Highest Degree (2)	2	10.	C
11.	Minor For Highest Degree (1)	2	11.	C
12.	Minor For Highest Degree (2)	2	11.	C
13.	Minor For Highest Degree (3)	2	11.	C
14.	* Annual Salary	1	12.	C
Professional Memberships (15-21):				
15.	AERA Member	1	13a	O
16.	NEA Member	1	13b	O
17.	AVA Member	1	13c	O
18.	APGA Member	1	13d	O
19.	APA Member	1	13e	O
20.	AECT Member	1	13f	O
21.	Other Membership	1	13g	N

APPENDIX 8 (cont'd)

Variable		Digits	Form 03 Source	Data Type
Prior Work Experience (22-30):				
22.	* College Teaching Experience	2	14a	yrs.
23.	* College Research Experience	2	14b	yrs.
24.	* Public School Experience	2	14c	yrs.
25.	* State or Nat'l Educ. Agency Experience	2	14d	yrs.
26.	* Educ. R & D Center Experience	2	14e	yrs.
27.	* Present Organization Experience	2	14f	yrs.
28.	* Other Educ. or Research Experience	2	14g	yrs.
29.	* Total Educ. R.D.D.E. Experience	2	16	yrs.
30.	* R.D.D.E. Directing Experience	2	17	yrs.
31.	* No. of Times Principal Investigator	2	18	N
32.	* No. of Proposals Submitted	2	19	N
33.	* No. of RDDE Projects Worked On	2	20	N
34.	* No. of RDDE Projects Now On	2	21	N
Required Experience (35-37):				
35.	RDDE Experience Required	2	26	yrs.
36.	Administration Experience Required	2	27	yrs.
37.	Management Experience Required	2	28	yrs.
38.	Level of Academic Training Required	2	29	C
39.	In-Service Training Received	2	30	O
Support Services (40-64):				
40.	Equipment Construction	1	31a	O
41.	Printing	1	31b	O
42.	Other Reproduction Services	1	31c	O

APPENDIX 8 (cont'd)

Variable		Digits	Form 03 Source	Data Type
43.	Photography	1	31d	0
44.	Art Work and Illustrations	1	31e	0
45.	Drafting	1	31f	0
46.	Technical Writing	1	31g	0
47.	Editing	1	31h	0
48.	Secretarial Service, Other Than Typing	1	31i	0
49.	Typing	1	31j	0
50.	Purchase of Supplies and Equipment	1	31k	0
51.	Library Holdings	1	31l	0
52.	Subscriptions to Journals/Periodicals	1	31m	0
53.	Requests for Documents or Publications	1	31n	0
54.	Computer Analysis Services	1	31o	0
55.	Computer Program Writing	1	31p	0
56.	Statistical Consultation	1	31q	0
57.	Audio-Visual Aids and Devices	1	31r	0
58.	Subjects for Experimentation	1	31s	0
59.	Travel Arrangements	1	31t	0
60.	Budgetary and Other Fiscal Accounting	1	31u	0
61.	Scoring of Test Items	1	31v	0
62.	Television Facilities and Equipment	1	31w	0
63.	No. of Other Support Services Cited	1	31x,y,z	N
64.	* Total Number of Support Services	2	31	N

APPENDIX 8 (cont'd)

Variable		Digits	Form 03 Source	Data Type
Support Equipment (65-77):				
65.	Dictating Equipment	1	32a	0
66.	Desk Calculators	1	32b	0
67.	Desk-top Computer	1	32c	0
68.	Remote Computer Terminal	1	32d	0
69.	On-site Computer	1	32e	0
70.	Key-punch Machine	1	32f	0
71.	Data Card Sorter	1	32g	0
72.	Photographic Equipment	1	32h	0
73.	Video Tape	1	32i	0
74.	Television Camera	1	32j	0
75.	Readers for Microfiche or Microfilm	1	32k	0
76.	No. of Other Support Equipment Cited	1	32l,m,n	N
77.	* Total Number of Support Equipments	2	32	N
78.	Trips Per Year	1	33a	C
79.	Trip Duration	1	33b	C
80.	Adequacy of Manpower	1	34	C
81.	Adequacy of Time	1	35	C
82.	Adequacy of Finances	1	36	C
Project Time Available (83-90):				
83.	Professional Papers	1	37a	0
84.	Speeches	1	37b	0
85.	Conventions	1	37c	0
86.	Current Literature	1	37d	0

APPENDIX 8 (cont'd)

Variable		Digits	Form 03 Source	Data Type
87.	Project Literature	1	37e	0
88.	Preparation of Proposals	1	37f	0
89.	Contacts With Other Agencies	1	37g	0
90.	Personnel Interaction	1	37h	0
Expected Activities (91-98):				
91.	Preparation of Professional Papers	1	38a	0
92.	Presentation of Speeches	1	38b	0
93.	Conventions & Professional Meetings	1	38c	0
94.	Reading of Current Professional Literature	1	38d	0
95.	Reading of Project Literature	1	38e	0
96.	Preparation of Proposals	1	38f	0
97.	Contacts With Other Agencies	1	38g	0
98.	Personnel Interaction	1	38h	0
Guidance Provided (99-108):				
99.	Project Time Lines	1	39a	0
100.	Forecasting, Monitoring, and Accounting	1	39b	0
101.	Specific Work Assignments (Daily/Weekly)	1	39c	0
102.	General Statements of Functional Goals	1	39d	0
103.	Occasional Reviews of Efforts and Remaining Work Goals	1	39e	0
104.	Frequent Review of Work Achievement	1	39f	0
105.	Regular Staff Meetings for Project Review	1	39g	0
106.	Individual Performance Review (Annual)	1	39h	0
107.	Close Daily Working Contact	1	39i	0
108.	No. of Other Guidance Means Cited	1	39j	N

APPENDIX 8 (cont'd)

Variable		Digits	Form 03 Source	Data Type
109.	* Project Structure	1	40	C
110.	* Internal Coordination Required	1	41	S
111.	* External Coordination Required	1	42	S
112.	* Number of Outputs Interviewed	2	top	N
113-127.	* Output Number(s)--up to 5 Outputs	3 each	top	C
	Persons Directly Supervised (114-117):			
128.	Total Currently	2	44a	N
129.	Project Currently	2	44b	N
130.	Total Normally	2	44c	N
131.	Project Normally	2	44d	N
	Persons Under General Supervision (118-119):			
132.	Total Currently	2	45a	N
133.	Project Currently	2	45b	N
134.	* Relationship to Project	1	46	C
135.	* Project Role (Set X)	1	47	C

KEY TO DATA TYPES:

C = coded
O = occurrence of item
N = number count
S = scaled

*Variable included in Level II-B, Sort Set.

Section 4

LEVEL 2-B: PERSONNEL DESCRIPTORS
(for sorting levels 3, 4, 5, 6, 7)

Variable		Digits	Form 03 Source	Data Type
1.	Project Number	3	top	C
2.	Interviewee Number	3	top	C
3.	FTE of Interviewee on Project	3	top	N
4.	Manager vs Staff/Line (and level)	1	3,4	C
5.	Sex	1	5.	C
6.	Age	1	6.	C
7.	Highest Degree Held	1	7.	C
8.	Number of Professional Pubs	1	9.	C
9.	Major For Highest Degree (1)	2	10.	C
10.	Major For Highest Degree (2)	2	10.	C
11.	Annual Salary	1	12	C
Prior Work Experience (12-20):				
12.	College Teaching Experience	2	14a	yrs.
13.	College Research Experience	2	14b	yrs.
14.	Public School Experience	2	14c	yrs.
15.	State or Nat'l Educ. Agency Experience	2	14d	yrs.
16.	Educ. R&D Center Experience	2	14e	yrs.
17.	Present Organization Experience	2	14f	yrs.
18.	Other Educ. or Research Experience	2	14g	yrs.
19.	Total Educ. RDDE Experience	2	16	yrs.
20.	RDDE Directing Experience	2	17	yrs.

APPENDIX 8 (cont'd)

Variable		Digits	Form 03 Source	Data Type
21.	No. of Times Principal Investigator	2	18	N
22.	No. of Proposals Submitted	2	19	N
23.	No. of RDDE Projects Worked On	2	20	N
24.	No. of RDDE Projects Now On	2	21	N
25.	Total Number of Support Services	2	31	N
26.	Total Number of Support Equipments	2	32	N
27.	Project Structure	1	40	C
28.	Internal Coordination Required	1	41	S
29.	External Coordination Required	1	42	S
30.	Number of Products Interviewed	2	top	N
31-45.	Output Number(s)--up to 5 Outputs	3 each	top	C
46.	Relationship to Project	1	46	C
47.	Project Role (Set X)	1	47	C

KEY TO DATA TYPES:

C = coded
O = occurrence of item
N = number count
S = scaled

APPENDIX 8 (cont'd)

Section 5

LEVEL 3: OUTPUT DESCRIPTORS
(for sorting Levels 2, 4, 5, 6, 7)

Variable		Digits	Form 05-B Source	Data Type
1.	Project Number	3	top	C
2.	Output Identification Number	3	1st	C
3.	Output Frequency	3	2nd	N
4.	Output Completion Stage (Set W)	1	3rd	C
5.	Structure of Output (Set A)	1	4th	C
6.	Output Level (Set B)	1	5th	C
7.	Number of Data Respondents	1	6-9	N
8-11.	Interviewee Number(s)--up to 4 persons	3 each	10th	C
12.	Cluster of Outputs (Set DE)	2	10th	C
13.	Primary Category of Output (Set FGHI)	4	11th	C
14.	Project Focus (Set Y)	1	12th	C
15.	Character of Focal Output (Set Z)	1	13th	C
16.	Output Character (Set C)	1	13th	C
17.	Output Function (Set a)	1	15-16	N

Variables 1, 2, 5, 6, 7, 8-11, 12, 13 and 16 are duplicated in Data Files 4, 5 and 6.

Section 6

LEVEL 4: SCALED DATA

Variable		Digits	Form 04 Source	Data Type
1.	Project Number	3	top	C
2.	Interviewee Number	3	top	C
3.	Item Set	2	top	C
4.	Scale Used	2	top	C
5-15.	Item Set 1, Significance (General Activity, 11 Items)	1 each	--	S
16-77.	Item Set 2, Significance (Specific Activity, 62 Items)	1 each	--	S
78-98.	Addendum	1 each	--	S
99.	No. of Specific Items Added (Item Set 2)	2	--	N

APPENDIX 8 (cont'd)

Section 7

LEVEL 5: STANDARDS DATA

Variable		Digits	Form 06 Source	Data Type
1.	Project Number	3	top-1st	C
2.	Interviewee Number	3	top-2nd	C
3.	Output Identification Number	3	top-3rd	C
4.	Page Number (in Project Set Form 06 Recap of Standards)	2	top-4th	C
5.	Structure of Outputs (Set A)	1	top-A	C
6.	Level of Outputs (Set B)	1	top-B	C
7.	Character of Outputs (Set C)	1	top-C	C
8.	Clusters of Outputs (Set DE)	2	top-DE	C
9.	Primary Categories of Outputs (Set FGHI)	4	top-FGHI	C
10.	Structure of Standards (Set J)	1	J	C
11.	Self/Other Report (Set K)	1	K	C
12.	Primary Categories of Standards (Set LM)	2	LM	C

APPENDIX 8 (cont'd)

Section 8

LEVEL 6: TASK DATA

Variable		Digits	Form 07 Source	Data Type
1.	Project Number	3	top-1st	C
2.	Interviewee Number	3	top-2nd	C
3.	Output Identification Number	3	top-3rd	C
4.	Page Number (in Project Set of Form 07 Recap of Tasks)	2	top-4th	C
5.	Structure of Outputs (Set A)	1	top-A	C
6.	Level of Outputs (Set B)	1	top-B	C
7.	Character of Outputs (Set C)	1	top-C	C
8.	Clusters of Outputs (Set DE)	2	top-DE	C
9.	Primary Categories of Outputs (Set FGHI)	4	top-FGHI	C
10.	Clusters of Tasks (Set NO)	2	NO	C
11.	Self/Other Report (Set P)	1	P	C
12.	Primary Categories of Tasks (Set QR)	2	QR	C

Section 9

LEVEL 7: ENABLER (KSS) DATA

Variable		Digits	Form 08 Source	Data Type
1.	Project Number	3	top-1st	C
2.	Interviewee Number	3	top-2nd	C
3.	Output Identification Number	3	top-3rd	C
4.	Page Number (in Project Set of Form 08 Recap of Enablers)	2	top-4th	C
5.	Structure of Outputs (Set A)	1	top-A	C
6.	Level of Outputs (Set B)	1	top-B	C
7.	Character of Outputs (Set C)	1	top-C	C
8.	Clusters of Outputs (Set DE)	2	top-DE	C
9.	Primary Categories of Outputs (Set FGHI)	4	top-FGHI	C
10.	Structure of Enablers (K, S, or S) (Set S)	1	S	C
11.	Self/Other Report (Set T)	1	T	C
12.	Primary Categories of Enablers (Set UV)	2	UV	C

APPENDIX 9

Profile Components

Profile Content Attachments

A1 Title Page
A2 Table of Contents
A3 Synopsis
A4 Contextual Map
A5 Organizational Structure Chart
A6 Project Roster
A7 Output Index
A8 Table of Output Frequency of Occurrence by Category
A9 Output Map

Supplementary Attachments

A10 Distribution of Responsibilities for Profile Items
A11 Profile Transmittal Sheet (Team, Worksheet 20)
A12 Profile Transmittal Sheet (Coordinators, Worksheet 21)
A13 Profile Transmittal Sheet (Editor, Worksheet 22)
A14 Profile Transmittal Sheet (Project Director, Worksheet 23)
A15 Profile Rating Sheet (Attached to W23)
A16 Profile Release Sheet (Attached to W23)

APPENDIX 9

Profile Components

Attachment 1: Title Page

A CASE PROFILE OF

A PROJECT TITLED: Study and Development of Automated Instructional-Materials-Handling Program

(AIMS Project)

AN EDUCATIONAL DEVELOPMENT PROJECT CONCERNED WITH: Developing a comprehensive automated system for handling information about instructional materials (book and nonbook) that meets the Los Angeles Unified School District needs and also serves as both a model and prototype system for large school districts throughout the country.

A PROJECT OF: Los Angeles Unified School District
450 North Grand Street
Los Angeles, California 90012

Case Profile Number 15
December 1970

This case profile is one of twenty being prepared within a project grant for "The Generation of Information to Support Long Term Manpower Studies of and Planning for Training Programs in Educational Research, Development, Diffusion and Evaluation" from the National Center for Educational Research and Development, Office of Education, U.S. Department of Health, Education and Welfare.

Prepared by

Teaching Research
A Division of the Oregon State System of Higher Education
Monmouth, Oregon 97361

APPENDIX 9 (cont'd.)

Attachment 2

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APPENDIX 9 (cont'd.)

Attachment 3: Synopsis

Synopsis of the Project (on 1 page)

Title: ______________________________

____

Responsible Institution: ______________________________

Subcontractor(s): (if any) ______________________________

Funding Source(s): 1. ______________________________

2. ______________________________

Funding Duration: start and end dates. (x months)

Observation Date: Month and year

Present Stage of Development: ______________________________

RDD or E Focus of Project: Educational

Expected Outcome(s): ______________________________

____

____

Level of Funding and Duration: (level x of 7 levels)

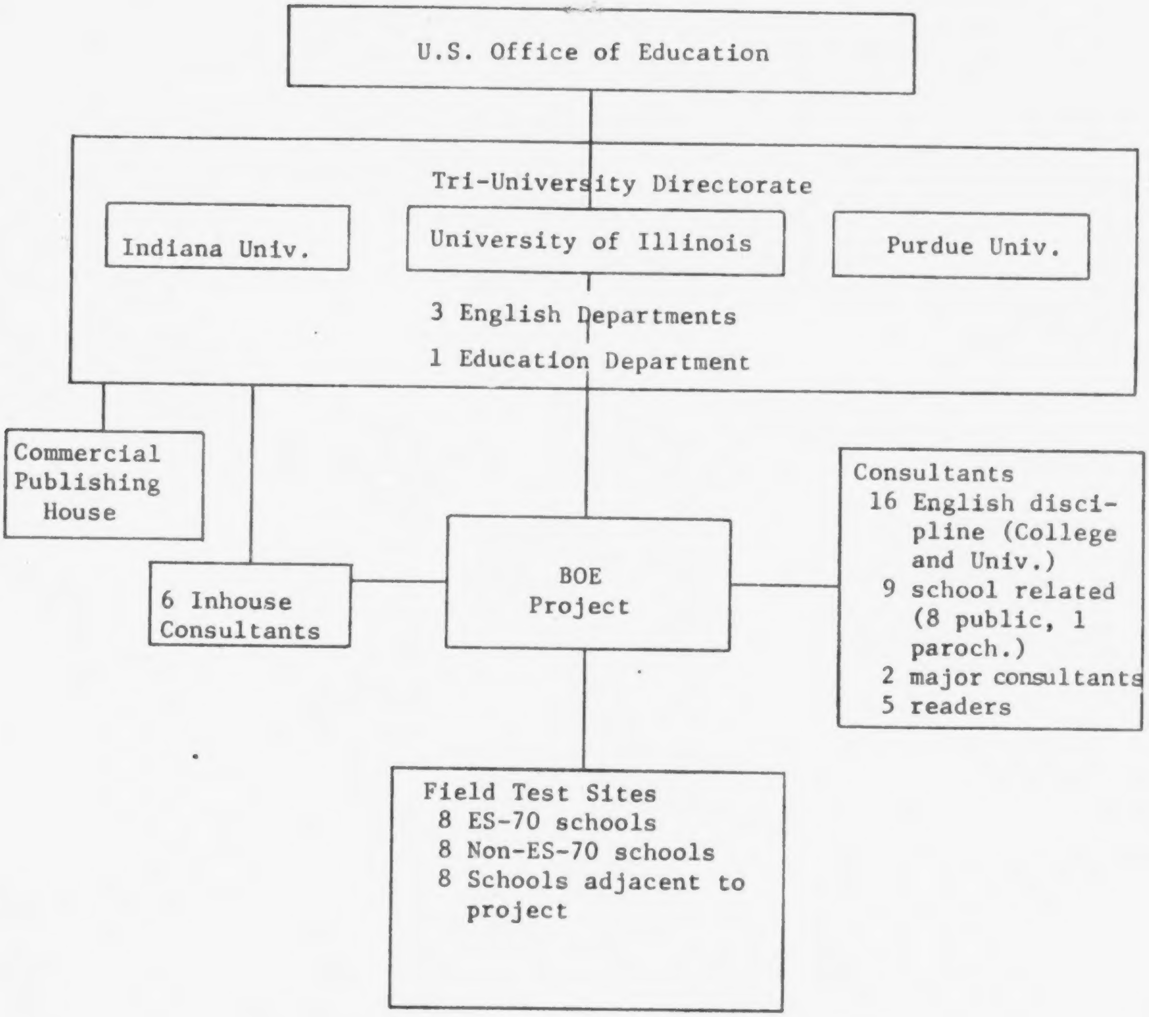
Agency Setting: ______________________________

Staff Summary (Current):	Professional	Support
Total Full Time Equivalency (in man years):	X	X
Number of Personnel Assigned:		
Prime Contractor	X	X
Subcontractor and Others:	X	X

Professional Specialities of Staff (interviewees only):

__________(3), __________(2), __________, __________.

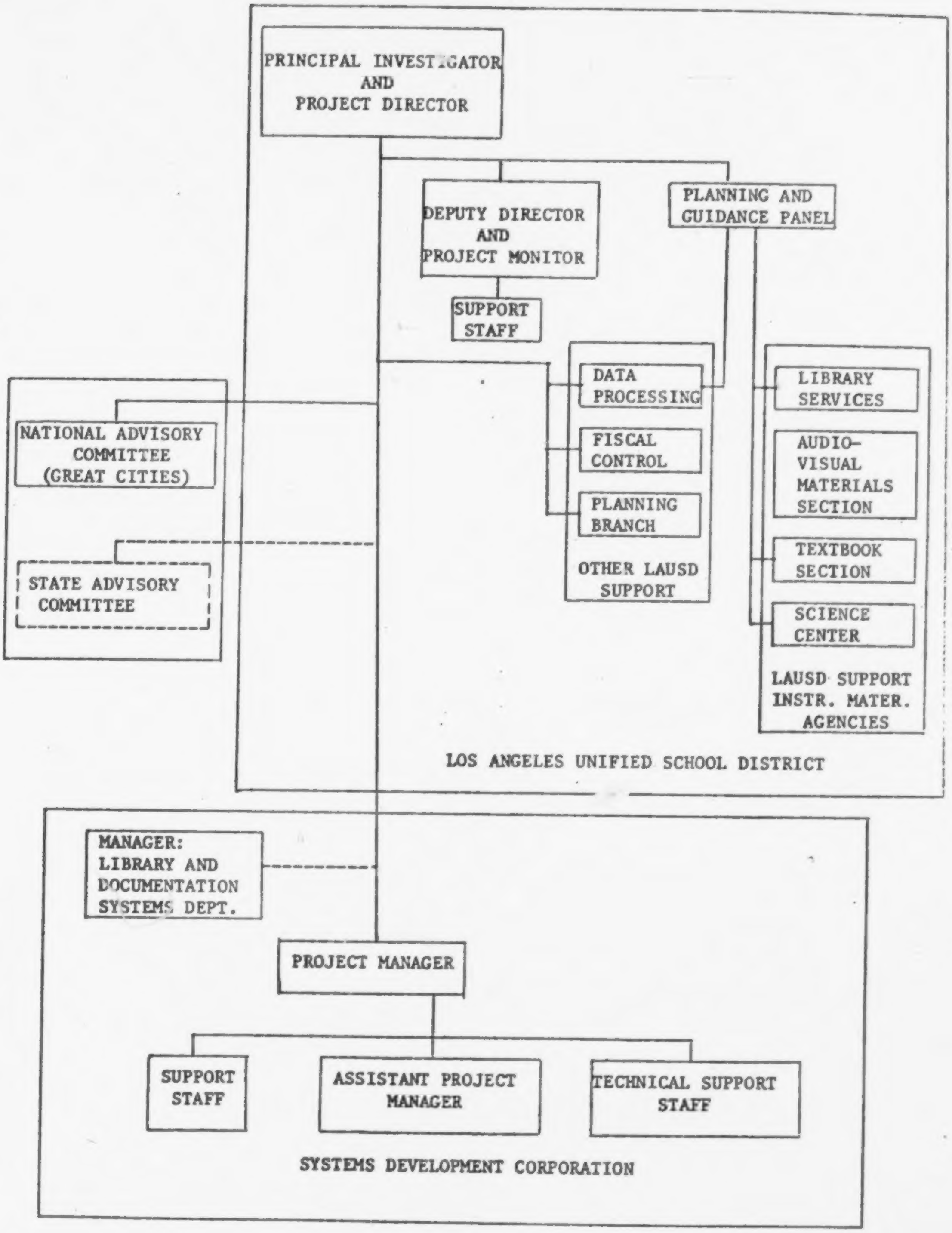
Attachment 4: Contextual Map


U.S. Office of Education
Tri-University Directorate
Indiana Univ.
University of Illinois
Purdue Univ.
3 English Departments
1 Education Department
Commercial Publishing House
6 Inhouse Consultants
BOE Project
Consultants
16 English discipline (College and Univ.)
9 school related (8 public, 1 paroch.)
2 major consultants
5 readers
Field Test Sites
8 ES-70 schools
8 Non-ES-70 schools
8 Schools adjacent to project

A final version of a contextual map.

APPENDIX 9 (cont'd)

Attachment 5: Organizational Structure Chart


PRINCIPAL INVESTIGATOR AND PROJECT DIRECTOR
DEPUTY DIRECTOR AND PROJECT MONITOR
PLANNING AND GUIDANCE PANEL
SUPPORT STAFF
NATIONAL ADVISORY COMMITTEE (GREAT CITIES)
STATE ADVISORY COMMITTEE
DATA PROCESSING
FISCAL CONTROL
PLANNING BRANCH
OTHER LAUSD SUPPORT
LIBRARY SERVICES
AUDIO-VISUAL MATERIALS SECTION
TEXTBOOK SECTION
SCIENCE CENTER
LAUSD SUPPORT INSTR. MATER. AGENCIES
LOS ANGELES UNIFIED SCHOOL DISTRICT
MANAGER: LIBRARY AND DOCUMENTATION SYSTEMS DEPT.
PROJECT MANAGER
SUPPORT STAFF
ASSISTANT PROJECT MANAGER
TECHNICAL SUPPORT STAFF
SYSTEMS DEVELOPMENT CORPORATION

A project organizational structure.

Attachment 6: Project Roster

Project roster. The following staff members were interviewed during the onsite visitation of the interview team.

Project Director. Assigned .25 full time equivalency (FTE) to this project, he worked on the proposal and was reassigned to the project for its duration when it was funded. He was also director of the earlier, related project of which REACT is a logical continuation. His responsibilities are administrative and supervisor, and he is primarily responsible for the final reporting from this project.

School Administrator Training Package Coordinator. Hired during previous phase of the project, he was reassigned (1.0 FTE) to the project when the current contract was funded. He is responsible for the completion of the Administrator Package, the MIDAS system, and shares responsibility for the testing design for the project.

Teacher Training Package Coordinator. She is supervisor of the Student Training Package and Clearinghouse efforts, having been hired during a previous phase of the project and assigned to the current project from beginning date at 1.0 FTE. She is responsible for the completion of the Teacher Training Package, and shares responsibility for the testing design for the project.

Curriculum Writer. She was hired (1.0 FTE) for writing student training units at the project's inception. She worked for a short term on a previous project in a similar capacity.

Programmed Instruction Specialist. Employed during a previous phase of the project, he rejoined the current effort at the beginning date with 1.0 FTE. He is responsible for development of the Writer Training process, consisting of interaction between curriculum writers and specialists in instructional technology.

The following staff member (not interviewed) completes the list of project personnel.

Computer Programmer. He is employed for the duration of the project at 1.0 FTE.

APPENDIX 9 (cont'd)

Attachment 7: Output Index

P-01. Computer-use Instructional Unit for Administrators. A written instructional plan for use in teaching school administrators to operate computers as a tool to enhance performance of their various administrative duties.

P-02. Computer-use Instructional Unit for Teachers A written instructional plan for use in teaching teachers to operate computers as a tool to extend their classroom teaching effort.

P-03. Computer-use Instructional Unit for Students. A written instructional plan for use in teaching students to operate computers as a learning tool.

E-04. Instructional Unit-writer Training. A series of inhouse training sessions planned to increase the capability of the writers in writing instructional units.

P-05. Computer Simulation of School Administration (MIDAS) A minature demonstration computer system of hypothetical school administration. This system includes pupil, personnel, financial, facility, and curriculum data files.

P-06. Field Testing Design. The written plan for evaluating the various instructional units being produced by the REACT Project.

P-07. List of Field Test Sites. A refined list of locations which would cooperate in the conducting of field tests for the various REACT outputs.

P-08. Clearinghouse Operational Plans. A written operational plan for the obtaining, classifying, and distributing of computer applications in school situations.

P-09. Three Student Instructional Units (Application Packages). Three written instructional plans to assist students in learning subject matter by employing the computer as an aid or tool.

APPENDIX 9 (cont'd)

Attachment 8: Table of Output Frequency of Occurrence by Category

Project Outputs		Output Characteristic[a]																		
		Structure			Function			Level			Character (Products only)				Completion Stage					
No.	Label	p	e	c	ps	m	p	f_1	c	f_2	k	t	i_1	i_2	1	2	3	4	5	6
P-01	Final Catalog of Performance Objectives in English, Grades 9-12	X					X	X				X						X		
P-02	Commercially Published Edition of Performance Objectives in English, Grades 9-12	X				X		X					X					X		
P-03	Final Report	X				X		X					X						X	
*P-04	Field Test Data from Use of Preliminary Catalog	X				X				X				X			X			
P-05	User Questionnaires	X				X				X		X				X				
P-06	Teacher Annotated Catalogs	X				X				X				X			X			
*P-07	Interview Questionnaire (Guide to Interviewers)	X				X				X		X				X				
P-08	Interviewer Written Reports	X				X				X				X			X			
*P-09	Preliminary Catalog	X					X		X			X				X				
P-10	Refined (Conference 2) Approximation to Catalog	X					X		X			X			X					
P-11	Modified Field Test Plan	X				X				X		X			X					
P-12	Video Tape Critique of First Draft of Performance Objectives	X				X				X				X	X					
P-13	First Draft of Objectives for Chapters to Catalog	X					X		X			X			X					
P-14	Journal Report (Project Officer)	X			X					X			X		X					
P-15	Journal Report of Project Progress (Project Director)	X				X				X			X		X					
P-16	Dissenting Position Paper (Journal Articles)	X				X				X				X	X					
*P-17	Response to Dissenting Position Paper (Journal Articles)	X				X				X				X	X					
*P-18	First Draft of Introduction to Catalog	X					X		X			X			X					
P-19	Agenda for Initial Conference	X				X				X		X			X					
*P-20	Outline of Catalog, Goals, Objectives and its Organization: First Draft	X					X			X		X			X					
P-21	Examples of Performance Objectives	X					X			X		X			X					
P-22	Initial Statement of Goal Areas for English	X					X		X			X			X					
P-23	Initial Field Test Plan	X				X				X		X			X					
P-24	List of Field Test Sites	X				X				X		X				X				
*P-25	List of Consultants (Confirmed)	X				X				X		X			X					
P-26	Proposal	X				X				X		X			X					
*E-27	Conference, Field Representatives		X			X				X					X					
*E-28	Initial Work Conference (October, #1)		X				X			X					X					
E-29	2nd Work Conference (March, #2)		X				X			X					X					
E-30	Field Use of Preliminary Catalog		X			X				X								X		
Classification Frequencies		26	4	0	1	19	10	3	5	22	0	16	4	6	19	4	3	3	1	0

[a] The specific output characteristics are identified as follows:

Structure

p - product
e - event
c - condition

Function

ps - policy setting
m - management
p - production

Level

f_1 - focal
c - component
f_2 - facilitating

Character

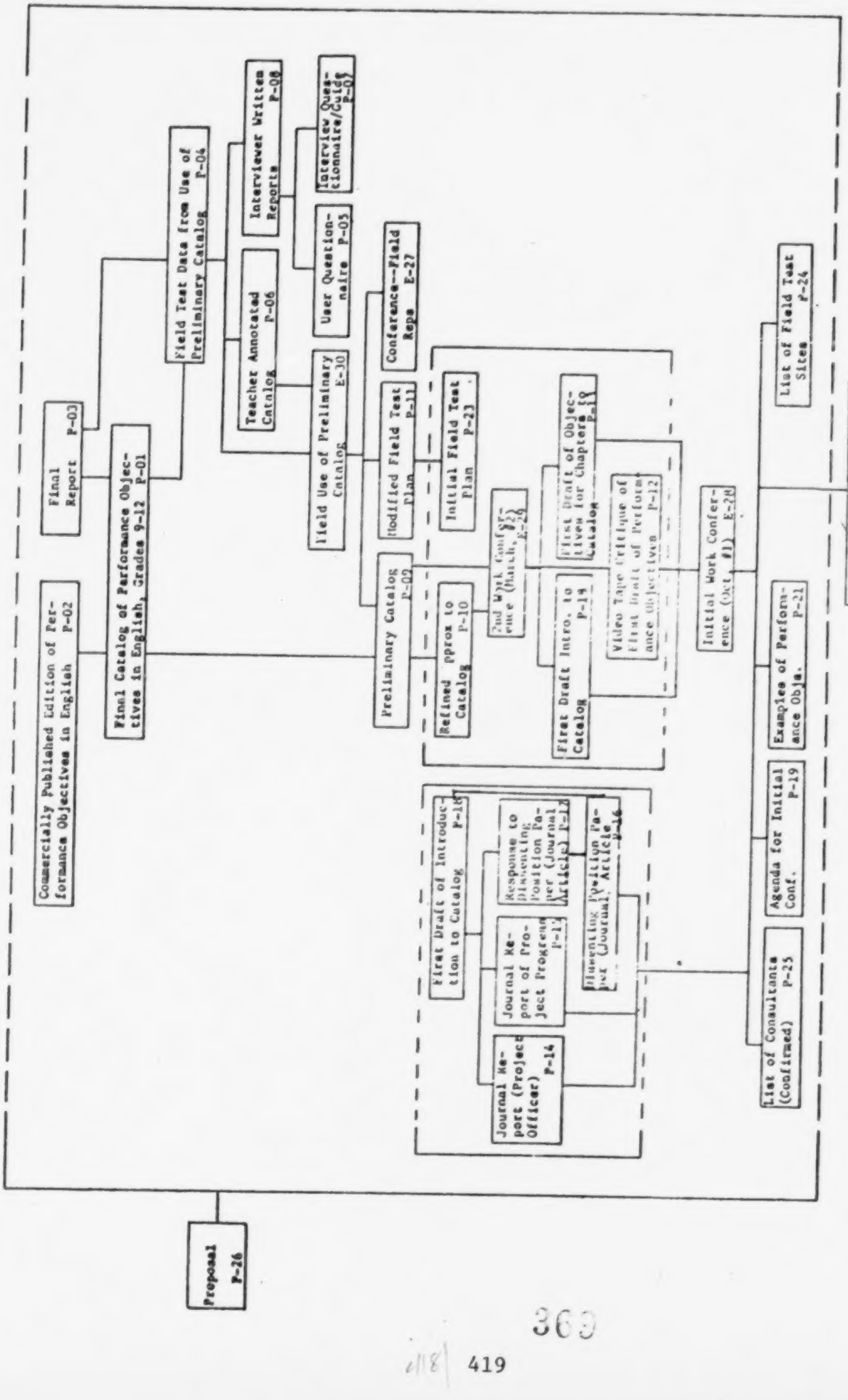
k - knowledge
t - technology
i_1 - implementation
i_2 - information

Completion Stage

1 - completed over one year ago
2 - completed 3 to 12 months ago
3 - completed within last 3 mos.
4 - currently in progress
5 - not yet underway
6 - on going (continuous)

APPENDIX 9 (cont'd)

Attachemnt 9: Output Map


Proposal P-26
Commercially Published Edition of Performance Objectives in English P-02
Final Catalog of Performance Objectives in English, Grades 9-12 P-01
Final Report P-03
Field Test Data from Use of Preliminary Catalog P-04
Teacher Annotated Catalog P-06
Interviewer Written Reports P-08
User Questionnaire P-05
Interview Questionnaire/Guide P-07
Field Use of Preliminary Catalog E-30
Conference--Field Reps E-27
Preliminary Catalog P-09
Modified Field Test Plan P-11
Refined pprox to Catalog P-10
Initial Field Test Plan P-23
2nd Work Conference (March, #2) E-29
First Draft Intro. to Catalog P-14
First Draft of Objectives for Chapters to Catalog P-11
Video Tape Critique of First Draft of Performance Objectives P-12
Initial Work Conference (Oct. #1) E-28
First Draft of Introduction to Catalog P-18
Response to Dissenting Position Paper (Journal Article) P-17
Journal Report of Project Progress P-13
Dissenting Position Paper (Journal Article) P-16
Journal Report (Project Officer) P-14
List of Consultants (Confirmed) P-25
Agenda for Initial Conf. P-19
Examples of Performance Objs. P-21
List of Field Test Sites P-24
Outline of Catalog, Goals, Objectives and its Organization: First Draft P-20
Initial Statements of Goal Areas for English P-22

An output map in its final form as produced through review and refinement during the course of site contact.

APPENDIX 9 (cont'd)

Attachment 10: Distribution of Responsibilities for Profile Items

Responsible Person(s)	Profile Item
Team Leader	Final Output Map
Coordinator for Data Collection	Approved Output Map
Team Leader	Output Index and Coding (Form 05)
Coding Resolution Team	Approved Output Labels and Codes (Form 05)
Team Leader	Annotations for Outputs Available to Others (e.g., published documents, instructional packages)
Team Leader	Complete Bibliographic Entries and Ordering Information (Form 01 and Worksheet 08)
Team Leader	Annotated Listing of Project Outputs (by major types or groups)
Team Leader	Project Roster and Related Outputs for Interview
Coordinator for Data Collection	Approved Project Roster Descriptions, Annotated Listings of Project Outputs, Annotations of Available Products
Each Interviewer	Recap Statements (Forms 06, 07, 08)
Coding Resolution Team	Recap Coding (Forms 06, 07, 08)
Coding Resolution Team	Review and Approval of Statements
Typist, Coordinator of Data Inputs	Collation of Output Catalogue Components (Forms 06, 07, 08)
Team Leader	Contextual Map
Team Leader	Organizational Structure Figure
Coordinator for Data Collection	Approval of Contextual Map and Organizational Structure

Responsible Person(s)	Profile Item
Typist, Coordinator of Data Inputs	Collation of Contextual Cues (Worksheet 11)
Typist, Coordinator of Data Inputs	Collation of Training Suggestions (Form 02 and Worksheet 13)
Data Analysis Team	Hand tally of Inventory Items (Form 02)
Typist, Coordinator of Data Inputs	Table Summarizing Form 03 Responses
Profile Writer	Table Summarizing Interviewee Backgrounds
Each Interviewer	Interview Notes on Interrelationships (Worksheet 14)
Profile Writer	Abstract of Project (edited)
Data Analysis Programmer	Computer Printouts of Usage of Category Sets
Typist, Coordinator of Data Inputs	Tables of Usage of Category Sets
Data Analysis Programmer	Computer Data on Relation of Category Sets of Outputs
Typist, Coordinator of Data Inputs	Tables of Category Set Relations to Outputs
Data Analysis Programmer	Computer Printout of activity Significance Means and Percents (Form 04)
Typist, Coordinator of Data Inputs	Table Summarizing Activity Significance
Profile Writer	Editing Proposal
Coordinator for Site Selection	Summary of Project Selection Characteristics

Attachment 11

Profile Transmittal Sheet (Team)

TO: DATE:

RE: FROM:

Attached is a copy of the first rough draft of case profile #______. Please review it carefully, writing your comments directly on the draft and/or on a separate sheet. When reviewing this case profile please be particularly sensitive to the following:

1. Accuracy of content and interpretations.
2. Completeness of obtained site information and product descriptions.

Please return the profile to me by ____________________, with your written comments.

Profile Transmittal Sheet (Coordinators)

TO: DATE:

RE: FROM:

Attached is a copy of first rough draft of case profile #________. Please look it over carefully, writing your comments directly on the draft and/or on a separate sheet. When reviewing this case profile please be particularly sensitive to the following:

1. Communicability of profile description for general audiences, including readability and clarity of style.
2. Adequate accomplishment of the conceptual intent of case profiles by RDD&E project.
3. Adequacy of specific information provided for technical audiences and potential use in the future of others.
4. Adequate handling of confidentiality of the information source.
5. Adequate handling of the sensitivity of project information and manner of description.

Please return the profile to me by ____________ ______, with your written comments.

APPENDIX 9 (cont'd)

Attachment 13

Worksheet 22

Profile Transmittal Sheet (Editor)

TO:
RE:

DATE:
FROM:

Attached is a copy of the site case profile #_______. Please look it over carefully, writing your comments directly on the draft and/or on a separate sheet. When reviewing this case profile please be particularly sensitive to the following:

1. Completeness of content.
2. Format consistency.
3. Readability and clarity of style.
4. Provision of definitions of technical terms, improper use of jargon.
5. Proper spelling, grammar, and syntax.
6. Reasonable compatibility of format and style with the other profiles.
7. Adequate handling of confidentiality and sensitivity.

Please return the profile to me by ______________________, with your written comments.

Profile Transmittal Sheet (Project Director)

Dear

Enclosed is a draft copy of the case profile we have prepared for your project. To reiterate, the intent of this case profile is to provide in-depth information about selected outputs which comprise your project. We have not attempted to present a historically complete review of your project, but instead have only the snap-shot which time allowed.

We would appreciate your review of the profile in terms of content accuracy, interpretations, and editing of project documents contained within the profile. Comment may be provided directly on the profile and/or on a separate sheet. If you have any concerns regarding the profile, please feel free to call collect at 000-000-0000 for:

Dr. John Doe, Project Director
Dr. Fred Smith, Project Coordinator
Mr. Gar Smith, Project Coordinator

Because of the press of time, we need to receive word from you by . Enclosed is a release form which we ask that you please sign and return. Also, please complete and return the attached rating sheet. A self-addressed envelope has been provided for the return of these forms and any other written comments.

Thank you very much for your cooperation and assistance in this matter and for your participation in the data collection process. You might be interested to know, also, that most of the information has been coded for computer storage--available for a variety of summative analyses across many projects.

Thank you again for your assistance.

Sincerely,

John Doe
Research Professor

JD:jj
Enclosure

APPENDIX 9 (cont'd)

Attachment 15: Profile Rating Sheet [PROJECT TITLE]

(Case Profile Number)

To Director (and/or rater): Following your review of the Case Profile prepared on the basis of information obtained from you and your staff, a rating of the representativeness of the Profile is requested. To assist in this rating, look at each item below and rate it on the basis of the key provided. Items (1), (2), and (3) are referenced throughout the profile, with primary concentration in Chapters I and II. Items (4), (5), and (6) indicate the location in the Profile of the specific items involved. Item (7) is a measure of the degree to which the Profile as a whole represents the project.

Rating Schedule

Check box A, B, or C as follows:

A = Representative of a majority of operational concerns.
B = Representative of only a part of operational concerns (concerns of significant proportions omitted.)
C = Major concerns not covered.

Focus of rating	A	B	C	Comment, if any
1. Description of organizational structure	☐	☐	☐	
2. Description of organizational operations, interrelationships	☐	☐	☐	
3. Description of the ends being sought by the project	☐	☐	☐	
4. Representativeness of all outputs indexed (Ch. II)	☐	☐	☐	
5. Representativeness of the outputs analyzed (Ch. III)	☐	☐	☐	
6. Representative accuracy of the data on outputs (Appendix)	☐	☐	☐	
7. Overall representativeness of the Profile	☐	☐	☐	

General Comment, if any:

TEACHING RESEARCH
A Division of the Oregon State System of Higher Education
MONMOUTH, OREGON 97361
Telephone (503) 838-1220

Attachment 16: Profile Release Sheet

Permission is hereby granted for the inclusion of:

A CASE PROFILE OF

A PROJECT TITLED:	The Evaluation of the Early Childhood Education Program
A PROJECT OF:	Appalachia Educational Laboratory, Inc. P. O. Box 1348 Charleston, West Virginia 25325
AS PREPARED BY:	Teaching Research Division Oregon State System of Higher Education Monmouth, Oregon 97361

within the outputs of a project for "The Generation of Information to Support Long-Term Manpower Studies of and Planning for Training Programs in Educational Research, Development, Diffusion, and Evaluation" which is being carried out under U.S. Office of Education Grant No. 0-70-4977.

Project Director:______________________________Date____________

The Oregon State System of Higher Education is composed of Oregon State University, University of Oregon, including The Medical and Dental Schools, Oregon College of Education, Southern Oregon College, Eastern Oregon College, Oregon Technical Institute, Portland State University, Division of Continuing Education and Teaching Research Division.

A GUIDE TO THE OREGON STUDIES IN EDUCATIONAL RDD&E

Volume I

SUMMARY REPORT

An introduction to and overview of the Oregon Studies as a whole. The volume contains an outline of the history of the Studies, the rationale around which they were designed, the context within which they were carried out, and the procedures followed in their execution. It also contains a description of the projects selected for study, the rationale underlying their selection, the criteria and procedures used in their selection, and an overview of the data collected on each project. Finally, the volume contains an introduction to the "case profiles" that house the data collected on each project, the results of all cross-project analyses, and the summary recommendations that have been made relative to training and the continued study of educational RDD&E activities. A brief description of the case study methodology developed within the Studies, an overview of a process whereby investigators may query computer-stored data files and original interview statements to obtain information bearing upon specific questions relating to training, manpower, policy, and work performance, and supporting data accompany the volume.

Volume II

THE LITERATURE OF EDUCATIONAL RDD&E

A compendium of existing literature that defines, describes, differentiates, or relates the activities labeled educational research, development, diffusion, evaluation, and various combinations thereof. The articles within the volume are introduced as a collection. Linking passages provide an interpretive context both for individual articles and for the sets into which they have been grouped.

Volume III

CONCEPTUAL FRAMEWORKS FOR VIEWING EDUCATIONAL RDD&E

A collection of papers which provide the conceptual underpinnings to the Oregon Studies. It contains three papers commissioned by the Studies as a basis for conceptual development, and a paper by staff from Teaching Research that describes the conceptual frame that guided and grew with the empirical thrust of the Studies. Each of the papers is a major document which defines, differentiates and relates one or more facets of educational RDD&E and provides a supporting rationale for the position adopted. Each paper is accompanied by a formal critique, and the set of papers is accompanied by an introductory and summary critique.

Volume IV

PROFILES OF EXEMPLARY PROJECTS IN EDUCATIONAL RDD&E

A collection of twenty case profiles that form the data base in the Oregon Studies. Printed in three parts, the profiles describe five research projects, seven development projects, three evaluation projects, and five diffusion projects. Each profile contains descriptions of the structure and function of the project being analyzed, the specific outputs expected to emerge from it, the operations required to produce each output, and the knowledges, skills, and sensitivities judged to be essential to the performance of those operations. In addition, each profile contains sections dealing with the "dynamics" of project operations and implications that derive from the project for preservice staff training. The projects described range from small, two-man efforts within university settings to very large school district "projects" employing several dozen staff members. Eighteen of the twenty projects described were judged to be illustrative of the kinds of RDD&E activities likely to occur within the context of education in the future. The twenty projects account for analyses around 298 project outputs and interviews with 134 professional staff members.

Volume V

A METHODOLOGY FOR THE STUDY OF EDUCATIONAL RDD&E

A detailed description of the most refined form of the data collection methodology developed within the Studies, directions to guide its use, and the decision rules needed for the volume to function as a users manual. The volume includes information on procedures used in site contact, site preparation, data reduction and analysis, and profile preparation. It also includes information on the category sets used in data reduction and the computerized data files that contain or provide access to all data collected in the Studies.

Copies of any or all of these volumes
may be obtained at cost from
Teaching Research
Monmouth, Oregon 97361